DISARMAMENT

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United Nations

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Address of the Secretary-General to the Advisory Board on Disarmament Matters

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Contents

Address of the Secretary-General to the Advisory Board on Disarmament Matters
Boutros Boutros-Ghali 1

Negotiating a Comprehensive Test-Ban Treaty

Current Prospects for a Comprehensive Nuclear Test-Ban Treaty
Yoshitomo Tanaka 9

Current Efforts to Negotiate a Nuclear Test-Ban
Lars Norberg 14

Delivering Test-Ban Results by 1995
Silvia Hernandez 19

Approaching a Comprehensive Test Ban; A United States Historical Perspective
Glenn T. Seaborg and Benjamin S. Loeb 35

Non-Proliferation and Issues of Regional and Global Security

Regional Security and Nuclear Non-Proliferation
Nabil Elaraby 57

A Nuclear-Weapon-Free Zone in the Middle East and Effective Verification
Shalheveth Freier 66

A Nuclear-Weapon-Free Zone in Africa
Ibrahima Sy 92

Nuclear Non-Proliferation and the International Inspection Experience in Iraq
Benoit Morel 103

Implementing the Chemical Weapons Convention

Practical Aspects Concerning the Implementation of the Convention Prohibiting Chemical Weapons
Serguei Batsanov 123

The Preparatory Phase of Setting up the Orgnaisation for the Prohibition of Chemical Weapons
Anil Wadhwa 141

Documentation Relating to Disarmament

Decision of the Conference on Disarmament on a Comprehensive Nuclear Test Ban Treaty
CD/1212 of 10 August 1993 157

Mandate of the Conference on Disarmament for an Ad Hoc Committee on a Nuclear Test Ban
CD/1238 of 25 January 1994 158

States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons
As of 15 February 1994 159

Summary of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction
Prepared by the Provisional Technical Secretariat of the Preparatory Commission for the OPCW 162

Recent Books 169

Recent United Nations Publications on Disarmament 175

Contents of Recent Issues of Disarmament 179

Acronyms 187

Address of the Secretary-General to the Advisory Board on Disarmament Matters

Geneva, 12 January 1994

I am grateful to you all for taking the time to come, at short notice, to this special session of the Advisory Board on Disarmament Matters. I value the work of this Board. You bring together a remarkable range of skills and experience in the field of international security. Your advice is important. You are a sounding-board for new ideas.

There are two reasons why I felt it necessary to hold a meeting of this Advisory Board early in 1994.

First, we need to look back over the past year. We need to assess the views of disarmament taken by Member States during the forty-eighth General Assembly.

Second, we must look forward to the coming year. We have to chart the way ahead. We must press on with the task of bringing new life, new urgency, new vigour, to disarmament.

Today, I am seeking your advice on these issues. I will be asking questions. Some of them will require your expert, detailed knowledge. But the crucial questions are three in number:

—What are the key issues ?

—What should be on the disarmament agenda of the international community in 1994 and beyond?

—What new concepts, new approaches, can be used to integrate, globalize, and re-invigorate the debate about disarmament?

Eighteen months ago, I published my report to the Security Council, *An Agenda for Peace.* I suggested some ways in which the United Nations could respond to the challenges of peace and security in the post-cold war world. Later, I looked specifically at disarmament, in my report *New Dimensions of Arms Regulation and Disarmament in the Post-Cold War Era.* Both *An Agenda for Peace* and *New Dimensions* have been widely discussed and debated. That process continues.

There is a new consensus on the need for crisis prevention. There is a new awareness that prevention is better than cure in international conflict.

The techniques of preventive diplomacy, peacemaking and peace-keeping must be integrated into, and become part of, the disarmament effort. All the techniques of crisis management will be needed. They include early warning, the collection and analysis of information, fact-finding, and other forms of confidence-building. Confidence-building measures are vital, both for arms control and for the maintenance of peace.

Are the advantages of an integrated approach fully understood and appreciated? Should we be doing more to publicize our objectives, and to produce new ideas?

The concept of peace enforcement has not yet been unanimously accepted by Member States. Are there lessons to be learned, for the disarmament effort, from the experience of the United Nations in Iraq and Somalia, or even in El Salvador?

No one doubts that the world remains a dangerous place. Nuclear, chemical, biological and conventional weapons still exist.

States face a whole series of new threats. They include: ethnic and religious conflict; environmental degradation and urban decay; and pauperization and instability in poor countries, especially in Africa. These factors often work together to reinforce conflict and bring bloodshed.

One result has been the proliferation of conventional weapons. In many countries, military expenditure continues to drain resources away from the real needs of people. The establishment of the Register of Conventional Arms was a major step forward. It will help to make military behaviour more predictable. It will increase transparency and openness. It is a historic development. I am pleased that all major arms suppliers and recipient States provided information to the Register in its first year of operation.

The Register will be even more effective when its scope is extended to include holdings and national production. But there can be no cause for satisfaction. Indeed, one effect of export controls and transparency in transfers is simply to *contain* proliferation.

Regional registers of conventional arms should now be the next step. They have the advantage of allowing the categories of weapons to be registered to reflect the security concerns felt in the region.

The aim must be to reduce arms holdings to levels commensurate with the genuine security needs of States. The United Nations has had much to say about conventional arms. But has the time not arrived for some practical and verifiable measures in this field? More confidence-building measures, particularly at the regional level, are needed.

I am in full support, for example, of the work of the Standing Advisory Committee on Security Matters in Central Africa—a grouping of 11 States. Their non-aggression treaty should provide a model of a regional confidence-building measure.

I shall look forward to hearing your ideas and suggestions.

In looking at the question of conventional arms proliferation, we must not leave out of account the broader north/south dimension.

In the fields of arms production and technology, for example, there is a widening gulf between the developed and the developing world. That is where the real roots of insecurity lie. It is a gap which must, somehow, be closed. Some donor countries, concerned about the proliferation of conventional weapons, are using development assistance programmes to influence arms expenditure by recipient countries. They are restricting overseas aid when arms expenditure in the developing country rises above a certain percentage of GNP. But some of those same donor countries are now exporting arms which are surplus to their military requirements or their industrial capacity. In other words, while one hand is offering incentives to restrict arms expenditure, the other is encouraging arms purchases.

How can we put an end to this irrationality?

As far as *nuclear disarmament* is concerned, all of you will agree that the end of the cold war has not removed the danger of nuclear weapons.

On the contrary, in some cases dangers have actually increased: problems of command and control, and the physical deterioration of weapons systems are two of the new challenges which we face. Accidents remain a frightening possibility.

But here, too, there are encouraging developments to report. The Conference on Disarmament has given its Ad Hoc Committee on a Nuclear Test Ban a mandate to negotiate a treaty on a comprehensive nuclear test ban. This is already important progress in one of the most vital areas of international security. I strongly hope that the negotiations will be brought expeditiously to a successful conclusion.

Another field where progress is vital is *nuclear proliferation*. As we prepare for the conference of the parties to the nuclear non-proliferation Treaty, the creation of a climate of confidence will be vital. Measures need to be taken now to create that climate.

A continuing moratorium on nuclear testing would greatly assist. A follow-up to the idea of a "cut- off" in the production of fissionable materials would also be helpful.

Universal adherence to the NPT must be our goal. The nuclear safeguards of the IAEA must be further strengthened. The agreement between Argentina and Brazil and the IAEA is a good step forward. I strongly support the plans for a nuclear-weapon-free zone in Africa. I urge interested parties to tackle the establishment of such a zone in the Middle East with an open mind and greater courage and imagination.

Incentives for non-nuclear-weapon States to take the path of nuclear proliferation must be removed. Transgressors must be given to understand that it is in their best interest to return to compliance.

Clarity of vision, and firmness of resolve, will be required.

At its historic session on 31 January 1992, the Security Council declared that "proliferation of all weapons of mass destruction constitutes a threat to international peace and security". Members of the Security Council committed themselves to work "to prevent the spread of technology related to the research for or production of such weapons [of mass destruction], and to take appropriate action to that end".

In *New Dimensions*, I continued that theme. I stated that "the question is how to turn the logic of non-proliferation into concerted action".

Last month, I visited North-East Asia, where there is a real concern about nuclear proliferation. I was pleased to note that the Republic of Korea and the Democratic People's Republic of Korea have signed an agreement on the de-nuclearization of the Korean peninsula. I reiterated to the Government of the Democratic People's Republic of Korea my view of the seriousness with which the international community would view a withdrawal of the DPRK from the NPT. I repeat my call to the interested parties to resolve, through negotiations, the remaining difficulties.

The goal must be international inspection of nuclear facilities in all the Member States of the United Nations.

In this connection, the decision by Ukraine to accede to the NPT and to negotiate the process of dismantling all nuclear weapons on its territory was an important step. The agreement, when signed, will strengthen international peace and security.

I would welcome your views on the question of *access to new technology*. During the cold war, the developed countries restricted access to dual-purpose technologies with a possible military application. The Security Council endorsed this approach. Yet not all Member States are convinced of its validity.

Progress is needed in this field too. I hope that multilateral negotiations on this subject can begin soon. Our aim must be the eventual replacement of the existing export-control regimes by arrangements more satisfactory to the importers. Is there scope for a limited verification regime in this sphere, perhaps similar to the IAEA? To be effective, such a regime would have to depend on an agreement by recipients on limited use, as well as on verification. Are suppliers ready to be more flexible?

Meanwhile, is there scope for improvements to existing supplier regimes? Can the best aspects of each regime be brought together? And, finally, what should be the role of the United Nations?

This topic will, of course, be covered in next month's International Conference on Technology and Arms Transfers. It will be sponsored by UNIDIR and the United States-based Institute for Foreign Policy Analysis. I hope our discussion today will give the participants some food for thought.

In *An Agenda for Peace*, and in many speeches and statements, I have made it clear that the maintenance of international peace and security is a shared undertaking, a partnership between the United Nations and regional organizations and arrangements.

In disarmament, the "globalization" of the subject implies—perhaps paradoxically—that more should be done by regional organizations. The United Nations will continue to be the lead player. But how can the role of regional organizations be enhanced?

Finally, I would welcome the views of this Board on the *machinery for disarmament*.

In *New Dimensions*, I called for a reassessment of arms control and disarmament machinery. Much work has already been done. I understand that Member States are in general content with the way the Disarmament Commission has carried out its reforms, both of the agenda and of its working methods. Any advice this Board may have to offer on the machinery of disarmament—including the workings of the Conference on Disarmament and the First Committee—would be of interest to me.

In closing, I must pay tribute to UNIDIR, and in particular to its Director, Mr. Lodgaard. You are, of course, UNIDIR's Board of Trustees. I am happy to associate all of you with the excellent work which UNIDIR is doing. I understand that you will be briefed tomorrow on recent activities. I am sure that you will be impressed by the range of activity under way.

I spoke earlier about 1995, in the context of the NPT. But 1995 will also mark the Fiftieth Anniversary of the United Nations. Is it too much to hope that, by then, we will have made real, concrete progress in disarmament?

I can think of no more fitting tribute to the founders of the Organization. I can think of no better anniversary gift from the United Nations to the peoples of the world. Let us work together to make that hope come true.

Negotiating a Comprehensive Test-Ban Treaty

Current Prospects for a Comprehensive Nuclear Test-Ban Treaty

Yoshitomo Tanaka

Efforts to achieve a nuclear test ban have had a very long history in nuclear disarmament negotiations; the ban has for many years been among the issues to which the Conference on Disarmament (CD) in Geneva has attached the highest priority. During the cold war era, however, little progress was made in the CD deliberations on this important issue. The build-up of nuclear arsenals and the strengthening of deterrence were primary concerns of the nuclear Powers. There was not much room for considering such measures as a comprehensive nuclear test ban, which, they feared might adversely affect their defence capability.

The end of the cold war dramatically changed the world security environment. In today's very fluid international situation, where various local conflicts have the potential of developing into wars that could endanger the

Yoshitomo Tanaka, who is Ambassador of Japan to the Conference on Disarmament, served as Chairman of its Ad Hoc Committee on a Nuclear Test Ban during 1993.

peace and security of the entire world, preventing the proliferation of weapons of mass destruction has become a task of paramount importance. It is a task that must be addressed urgently in order to ensure the peace and safety of the international community.

Against that international background, in 1993 the Conference on Disarmament reestablished its Ad Hoc Committee on a Nuclear Test Ban. The previous year, after successfully concluding negotiations to ban all chemical weapons, the Conference placed the nuclear test ban issue high on its agenda. In its plenary on 10 August 1993, the CD made the historic decision to give a negotiating mandate to the Ad Hoc Committee on a Nuclear Test Ban.

The CD and its predecessor disarmament negotiating body, the Conference of the Committee on Disarmament (CCD), had by no means remained idle during the cold war period. Even during the time of greatest tension, efforts continued to be made to achieve the ultimate objective of a comprehensive nuclear test ban. In 1963 the partial test-ban Treaty was concluded, prohibiting all nuclear tests except those conducted underground. The justification given at the time for this exception for underground nuclear tests was the alleged impossibility of verifying such tests effectively.

Since then, tremendous efforts have been made to develop more sophisticated technologies for verifying underground nuclear testing. Seismic experts have been mobilized to work out a world-wide network of seismic stations to detect and identify even the smallest possible underground nuclear tests. The Ad Hoc Group of Scientific Experts to Consider International Cooperative Measures to Detect and Identify Seismic Events has been working as a subsidiary body of the CD for seventeen years to elaborate a seismic information network. By conducting experiments within the framework of that world-wide seismic information network, the Group has made impressive technical progress in the detection and identification of very small-scale underground nuclear tests. Additional experiments are planned for early 1995.

Until very recently, those scientific efforts were conducted in the absence of any certainty that the knowledge gained would be put to practical use as verification measures for a comprehensive nuclear test ban. But now, finally, the time has come when the knowledge gained on the basis of these efforts can be applied to our long-sought objective of a comprehensive nuclear test ban.

When I assumed the chairmanship in January 1993, the Ad Hoc Committee on a Nuclear Test Ban had not yet been given a negotiating mandate for a comprehensive nuclear test-ban treaty. Nevertheless, we commenced our work in a favourable atmosphere, amid heightened anticipation of new momentum towards such a treaty. In October 1991, after the collapse of the Soviet Union, the Russian Federation declared a moratorium on nuclear testing and, in April 1992, France took a new initiative for a moratorium. In October of the same year, the United States enacted legislation for the observance of a moratorium on nuclear testing and the start of negotiations on a comprehensive test-ban treaty.

The United Kingdom had not conducted a test since November 1991, nor, until October 1993, had China conducted a test since September 1992. That nuclear test-free international environment, which prevailed throughout the 1993 session of the Conference on Disarmament, was conducive to very fruitful deliberation in our Ad Hoc Committee.

It is thus all the more regrettable that China carried out a nuclear test on 5 October. This test went against the growing international momentum to work towards a comprehensive nuclear test ban, and we sincerely hope that it will not impede negotiations toward that end. From this point of view, my country strongly urges China not to repeat such testing and has called upon other nuclear-weapon States to continue to refrain from conducting nuclear tests.

There was general agreement among the members of the Ad Hoc Committee, even before obtaining the negotiating mandate, that it should devote its efforts to work that would have to be done sooner or later during the negotiation of a comprehensive nuclear test-ban treaty.

There was a widely-held view that while seismic monitoring should form the core of a future CTBT verification system, monitoring by seismic means alone might not engender complete confidence that the comprehensive test ban was in fact being observed. The Ad Hoc Committee therefore determined that there was a need to begin exploratory work on other technologies that could be applied to the development of a CTBT verification system. The Committee thus devoted most of its substantive discussion in 1993 to an exploration of non-seismic technologies. In order to enhance the technical quality of the discussions, the delegations in a position to do so were requested to provide technical experts. Twenty expert presentations were made during this year's session of the Ad Hoc Committee as it undertook, for the first time, substantive consideration of non-seismic verification techniques covering a wide range of technologies. The Committee devoted its efforts to identifying technologies which might be useful for building a verification system, and for gathering information from experts on the benefits and problems of using non-seismic technologies.

Two possible ways to use non-seismic verification techniques were suggested. First, such techniques could supplement a global seismic monitoring network by simultaneously providing to the competent international and national authorities relevant information attributable to them. Second, they could be viewed as providing an information-gathering network to supply complementary qualitative data whenever an event is detected by a seismic or other type of network and when, consequently, a focused means of verification is needed. The most typical method for the latter purposes is, of course, on-site inspection.

After those deliberations were conducted as preparatory work for the negotiation of a CTBT, it was decided on August 10 to give a negotiating mandate to the Ad Hoc Committee. That was widely recognized as a major turning point in multilateral efforts toward a CTBT. Subsequently a CTBT resolution was adopted by consensus for the first time in history at the meeting of the First Committee of the United Nations General Assembly on 19 November 1993.

Substantive negotiations on a CTBT were to commence at the beginning of 1994. It was my responsibility, as Chairman of the Ad Hoc Committee on a Nuclear Test Ban, to conduct consultations during the intersessional period on organizational questions relating to negotiations so that it would not be necessary to spend much time on procedural matters and to be able to enter into substantive negotiations immediately on the commencement of the 1994 CD session in January.

Acordingly, I consulted with members of the Ad Hoc Committee on such organizational questions as the preparation of a specific negotiating mandate for the Committee, the establishment of its subsidiary bodies, its programme of work, and the documents that needed to be prepared for the negotiations. I also discussed other organizational questions relating to the negotiations with the members of the CD.

Nineteen ninety-four will be a very important year, not only from the viewpoint of CTBT negotiations, but also for the purpose of promoting nuclear non-proliferation. I sincerely hope that genuine progress will be achieved in this field, which is of vital importance for the security of the world.

Negotiating a Comprehensive Test-Ban Treaty

Current Efforts to Negotiate a Nuclear Test-Ban

Lars Norberg

We now have a unique opportunity to negotiate and subsequently conclude a Comprehensive Test Ban Treaty (CTBT). The role of the United States is decisive. The fact that the Clinton Administration has made a commitment in favour of "the rapid completion of a CTBT" has changed the prospects for those negotiations, and that position is strongly supported by the United States Congress.

There seem to be two main reasons that it is a realistic option for the United States to take that approach at this time. First, the United States is increasingly concerned about the problem of the proliferation of nuclear weapons, and it sees that active support for a CTBT can help sustain the viability of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Second, the United States does not really need to test any more. It can undertake simulations which provide all the information that is needed on its nuclear weapons. By freezing the technological situation now, the United States will

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maintain its technical superiority in relation to the other nuclear-weapon States.

Also, my country and most Western States have shifted emphasis to the non-proliferation aspects of a nuclear test ban. That creates a dilemma for us, because what can be called a traditional CTBT would only prohibit nuclear explosions by containing provisions for verifying whether an explosion has or has not taken place. Such a limited scope of a test ban may no longer be viewed as adequate if the objective is to prevent proliferation of nuclear weapons.

That means that unless something is done to limit or prevent pre-testing activities, a CTBT will have little or no effect on the proliferation of nuclear-weapons capabilities. Theoretically, a country which is party to such a CTBT—but not to the NPT—could make all the preparations needed for a nuclear test, except for pressing the button, and still be in compliance with the CTBT.

This dilemma is particularly significant for the nuclear-weapon States. It can be argued that if they are serious about a CTBT, they would close down all their test sites. But if for some reason they decided to keep their test sites, that could constitute *per se* a violation of the treaty. Any exceptions for the nuclear-weapon States are politically excluded.

In June of this year, Sweden presented a draft for a CTBT to the Conference on Disarmament in Geneva. At that time we presented a text of the treaty but not the protocols containing the verification regime which represents the bulk of the whole treaty. We are now in the process of finalizing the protocols, and their basic elements can therefore be outlined in this article.

As regards the treaty itself, the scope of the prohibition is fundamental. Unlike previous CTBT-drafts, the Swedish proposal bans all kinds of nuclear explosions. Thus, no distinction is made between explosions for military and those for so-called peaceful purposes. From the reactions we have received thus far on our CTBT draft, there seems to be a general understanding that a future CTBT should ban all nuclear explosions, irrespective of what they are called.

It has been suggested that the scope of the prohibition of a CTBT should be defined in scientifically solid terms. The reason given is that otherwise legitimate research would be inadvertently impeded. In particular, it is argued that research on fusion energy can require processes that could be labelled as nuclear explosions.

I would, however, caution against entering into negotiations on definitions. It is highly unlikely that it would be possible for scientists to agree on a definition. In the Swedish draft, the formula of the partial test-ban Treaty (PTBT) is used. That formula has not hampered legitimate nuclear research to date, and there is no reason to believe that it would not work equally well in the future.

Since we are very concerned about pre-test activities, we are considering the possibility of including preventive measures regarding such activities in our draft treaty. We believe that, for non-proliferation purposes, there is a need for such measures, but that this is an extremely complicated issue which will have to be explored further.

One of the most crucial preparatory activities for developing a nuclear explosive device is the manufacturing of weapons-grade fissionable material. The proposal presented by President Clinton to initiate negotiations on prohibiting the production of such material is thus most welcome. Even if a prohibition on fissionable material is agreed upon in a form which is separate from a CTB treaty, it would constitute a most effective measure for preventing the proliferation of nuclear weapons capabilities.

It is therefore essential that a prohibition on fissionable material should be agreed upon more or less simultaneously with the conclusion of a CTBT.

As regards the verification of the treaty, we propose that the primary method of detecting explosions would be seismic. A fairly extensive regime for the seismic detection of nuclear explosions has already been developed in Geneva. This work is already quite advanced. But there is also a need for complementary methods such as atmospheric detection and acoustic methods, including hydroacoustics. Our draft treaty also contains provisions for on-site inspection. If there is an event which might be a nuclear explosion, but where it is not certain, it is proposed that inspectors be allowed to look at the site in order to collect information that can serve as a basis for determining whether the observed event was, or was not, a nuclear explosion.

We are proposing that the implementing agency for verification of a CTBT should be the International Atomic Energy Agency (IAEA) in Vienna. In view of the fact that at the present time, the Agency does not have the necessary capability to carry out such a task, additional resources would be needed.

Finally, I think that the CTBT will need to be complemented by other agreed arrangements for the purpose of non-proliferation. Consequently, I believe, the CTBT should be viewed, together with other treaties and other arrangements, as part of a network, which in its combined form would constitute an effective non-proliferation regime.

The opportunity we now have to achieve a nuclear test-ban treaty has a time limit. It is therefore an opportunity which has to be used now. It is possible that a subsequent Administration in the United States would have a different policy regarding a CTBT. Also, we do not know what will happen in the other nuclear-weapon States. Currently we have a political situation which is favourable to the kind of agreement being discussed. If we can complete a CTBT, it will have enormous political impact and great importance for a range of issues relating to the non-proliferation of nuclear weapons and to international security.

Of course, one cannot predict how long it will take to negotiate a CTBT. The United States Congress has set 1996 as the date by which a treaty should be ready; so that is one established deadline. The non-aligned countries are interested in seeing a treaty concluded before the 1995 Conference of the Treaty on the Non-Proliferation of Nuclear Weapons. Clearly, the negotiators in Geneva are faced with a limited time in which to negotiate a comprehensive test-ban treaty. They know that there is a deadline. That is why the unique opportunity we have at this time must be used.

Negotiating a Comprehensive Test-Ban Treaty

Delivering Test-Ban Results by 1995

Silvia Hernandez

When the first nuclear arms control measure—the partial test-ban Treaty—was signed in 1963, the United States and the Soviet Union had been locked for over a decade in fierce competition over who could deploy the most fearsome nuclear arsenal. Despite the obvious shortcomings of the agreement, non-nuclear-weapon States rushed to join it. At the same time, when the Treaty was presented to the United Nations General Assembly, the delegations of those States insisted on underscoring the commitment which parties made in the Treaty to follow through on preparing a comprehensive test-ban treaty.[1] Their security, and ultimately that of the entire world, depended upon nuclear arms control becoming the norm, not the nuclear arms race. Nonetheless, throughout the cold war, arms control invariably played catch–up to arms acquisition.

With the end of the cold war, the question of achieving real control of nuclear weapons has more importance than ever. Not only does the issue merit close attention today; it requires attention and action by April 1995. On that date, the

Silvia Hernandez is the International President of Parliamentarians for Global Action and a member of the Mexican Senate where she is Chairperson of its Human Rights Commission.

parties to the Treaty on the Non–Proliferation of Nuclear Weapons will gather in New York to consider the future of the NPT and to assign a term-in-force to it. There is no question of the Treaty "expiring", because its text does not designate an initial term-in-force. Rather, the decision about its duration was deferred until 25 years after its entry into force. Thus the 1995 Conference must decide the arrangement under which the Treaty shall continue in force.

A central consideration will be the viability of the most controversial element of the Treaty, article VI, which addresses the question of nuclear arms control. Indeed, it was fear that this article might not be treated with full seriousness that prompted negotiators of the NPT to include in the Treaty a provision (article X) which limited the initial term-in-force of the Treaty to 25 years.

As another means of ensuring that the Treaty would be implemented, provision was made in article VIII for review conferences every five years. At the Fourth NPT Review Conference in 1990, Mexico presented a paper on the public negotiating record which extensively documented that point.

Four review conferences have been held—all before the cold war ended. They were not completely harmonious events, but were marked by considerable tension between the nuclear-weapon States parties to the Treaty and a number of the non-nuclear-weapon States parties which were critical of the implementation of the Treaty, especially with regard to article VI. That article commits each of the parties to the Treaty "to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control".

The First Review Conference in 1975 was on the verge of failure when the Conference President, Inga Thorsson of Sweden, introduced a general summary statement that was on the whole acceptable to the parties, although with reservations. The 1980 Conference was unable to reach consensus on several points, precluding agreement on a final declaration, and the 1985 Conference issued a declaration in which the parties noted their strongly-held differences of opinion. At the Fourth NPT Review Conference in 1990, its President, Ambassador Oswaldo de Rivero of Peru, made an eleventh-hour effort to summarize differences in a draft proposal which was intended for adoption by consensus but which was unsuccessful. In each case there was a pattern whereby the nuclear-weapon States asserted that the Treaty was being implemented in good faith to the extent possible, given the political and military confrontation of the cold war. The non-nuclear-weapon States, in contrast, stated that the nuclear Powers had not done all that could be done to implement article VI.

The question of achieving a comprehensive ban on the testing of nuclear weapons was also a major issue of contention, and the fact that parties were not able to agree on wording that would have reflected their commitment to a CTBT was the critical point which prevented any substantive consensus at the 1990 Review Conference. A Mexican statement at the time stressed the importance of negotiations to conclude a CTBT and said that the absence of the political will to conclude such a treaty continued to be an obstacle to full compliance with the spirit and the letter of the provisions of the NPT with regard to nuclear disarmament. That statement asked, "How can the cessation of the nuclear-arms race be attained without first closing the door on perfecting and qualitatively developing nuclear arsenals?"

The 1995 NPT Conference will be held under very different conditions. Referring to their arms reduction agreements, the United States and Russia will be able to present a credible case that nuclear arms control is recovering lost ground. Indonesia's sponsorship, on behalf of the member countries of the Movement of Non-Aligned Countries, of a 1993 United Nations General Assembly resolution on bilateral arms control (48/75 B) demonstrates the value placed on those recent agreements by non-nuclear nations.

At the same time, the basic issue is whether arms control efforts are actually in control of nuclear military policy in the nuclear-weapon States? For most of the world, there is a simple way of assessing the answer to that question: Has nuclear-weapons testing been prohibited? It has become almost a cliché to refer to the test ban as the "litmus test" for nuclear arms control. The nuclear Powers may protest that this is an unreasonable criterion, but the international community is convinced that arms control efforts are fundamentally flawed as long as nuclear-weapon testing is allowed to continue, for they believe there can be no "cessation of the nuclear arms race", as called for in article VI, without a total test-ban. The test-ban issue was the main point of disagreement at all four NPT review conferences. If the nuclear Powers wish to dispel the apprehension of the non-nuclear world about the viability of article VI, they must deliver on the nuclear test-ban issue.

The nuclear Powers are fully aware of that, and yet, with one exception, they persist in approaching the test-ban issue with ambivalence. Only Russia has taken a clear position in favour of a permanent end to testing. After some fitful stops and starts, Russia has not tested for more than two years and has stated that it will be the last nuclear Power to resume testing. That does not mean that the Russian weapon laboratories accept this forbearance without protest. As Professor Frank von Hippel has noted, the Russian designers of nuclear weapons and tests, like their American counterparts, are adept at advocating the indefinite need for their own services.

Under President Clinton, the commitment of the United States to negotiate a comprehensive test ban is quite firm. However, in the schedule of the United States negotiators, the conclusion of test-ban negotiations is targeted for September 1996, not April 1995. The 1996 date was agreed upon by the United States Congress in 1992, to allow for the possibility of completing a three-year test series on the reliability and safety modifications of stockpiled weapons before a CTBT came into force.

The United States Administration has since determined that no further tests are necessary. On 3 July 1993, President Clinton said that additional nuclear tests could provide some additional improvements in safety and reliability, but that the price that would be paid for conducting them by undercutting the non-proliferation goals of the United States would outweigh the benefits of the tests. The decision, therefore, to extend the testing moratorium was taken with full recognition of its political importance in the international efforts of the United States to prevent proliferation of nuclear weapons. While forgoing further testing was conditioned upon no other nation's testing, the Chinese explosion of October 1993 has not triggered testing by the United States.

September 1996 continues to be the target date in the United States plans for the completion of a comprehensive test-ban treaty. Some experts maintain that the proposed treaty will be technically difficult to negotiate and that 33 months is not a long time. Others foresee difficulties drawing the United Kingdom, France and China into substantive negotiations and are worried that fast-paced negotiations will scare them off.

The United Kingdom operates at a disadvantage. Since it has conducted its tests at the United States testing site in Nevada, it is constrained to follow the American lead. While there has been speculation that the United Kingdom could turn to another nuclear Power for testing facilities, the

French Pacific test sites are the only reasonable candidates, and, given regional opposition in the Pacific to French testing, it is highly unlikely that the United Kingdom would want to attract that opposition to itself, especially since Australia and New Zealand are among the most influential Commonwealth nations. Technically, President Clinton could authorize a British test even while the United States continued to refrain from testing. Clearly that could never have happened prior to the Chinese test, since it would have made a mockery of the United States pledge not to be the first to test, and is unlikely to happen in spite of that test.

In April 1992 the President of France, François Mitterrand, suspended testing. Also, following the Chinese test in October 1993, he urged other nuclear-weapon States not to resume testing. On the other hand, French policy is somewhat ambivalent on agreeing to a permanent ban as long as tests are viewed as vital to the technical credibility of France's forces. A government commission to study the related technical issues concluded that further testing was necessary, but that any return to testing could wait a year or so.

China has asserted that it would willingly sign a comprehensive test ban as long as it was part of a larger agreement to eliminate nuclear weapons. Only the prospect of eliminating nuclear weapons in the near future would, in China's view, eliminate its present need for testing. But if the weapons are going to be around longer, it is felt that China must test them. China tested on 5 October 1993 despite the moratoria of the other nuclear Powers. In this period leading up to the leadership succession struggle in China, it is unlikely that any political leader would wish to incur the displeasure of the People's Army on this issue.

CTB negotiations began early in 1994 at the Conference on Disarmament in Geneva under the chairmanship of Ambassador Miguel Marin Bosch of Mexico. If Russia and the United States allow the United Kingdom, France and China to set the pace of those negotiations, the prospects for results by April 1995 are not promising. At the 1995 NPT Conference, the nuclear Powers will no doubt continue to profess firm resolve to achieve a CTB by October 1996. But the last thing the non-nuclear States want to discover after 1995 is that the promises made by the nuclear-weapon States in 1995 were empty ones, designed to gain the support of the non-nuclear-weapon States for an indefinite extension of the NPT and then forgotten.

There is a negative precedent from the second NPT Review Conference. In 1980, the non-nuclear-weapon States were told by Russia, the United Kingdom, and the United States that their test-ban talks were making significant progress. The non-nuclear-weapon States asked that multilateral talks begin, so that a multilateral agreement could be concluded as well as the one among the three. Rejection of that proposal by the three confirmed the suspicions of the non-nuclear-weapon States that, in fact, the tripartite talks were badly stalled. With CTB negotiations now being pursued multilaterally, the non-nuclear-weapon States will be able to reach their own independent judgment of the rate of progress in Geneva.

Without an answer on the test-ban issue, the viability of article VI's nuclear-arms-control agenda would be put into question. How could the non-nuclear States parties to the NPT give indefinite life to an agreement a major provision of which may be a dead letter?

As mentioned above, the provisions for treaty review and extension were designed to provide a means of applying pressure for full compliance with article VI. Given the poor record of the review process, parties can be expected to ask themselves whether the potential utility of the extension process should be squandered on the very first occasion. A related issue concerns the advisability of allowing a treaty with explicitly discriminatory provisions to become a permanent feature of international law.

On the other hand, those grim forebodings may be misplaced. The Geneva talks may be conducted in an uncharacteristically energetic manner. An early draft of the 1993 United Nations General Assembly resolution on a CTB actually used the adjective "energetically" in reference to the pursuit of negotiations. The text finally adopted by the General Assembly following action by the First Committee was somewhat more subdued (resolution 48/70). The nuclear Powers may feel compelled to bring forward their 1996 target date to early 1995. China may relax its stand on placing a CTB agreement in the context of a nuclear-disarmament agreement. Mitterrand may see in the test-ban negotiations an opportunity, before taking his final bow, to surpass even the success of the Chemical Weapons Convention. It is worth recalling that President Mitterrand diverged from his written text at the CWC signing ceremony in January 1993 to make a personal appeal for other nuclear Powers to join his nuclear-testing moratorium. In short, since no technical obstacles remain, success in the Conference on Disarmament hinges on the political will of the five being fully mobilized.

It should be considered a positive sign that the United States saw the wisdom of conducting negotiations in the CD rather than working exclusively among the nuclear five. In five-power talks the United States and Russia would be outnumbered by the other three, and the very goal of a CTB would be in jeopardy. At the Conference on Disarmament, it will be the three that are outnumbered, the United States and Russia having the support of the other members of the CD in their wish to move directly to conclude a CTBT.

Geneva will certainly bear close monitoring. Indeed, the more than 120 parties to the partial test-ban Treaty will do precisely that. On the very day—10 August 1993—that the members of the CD achieved consensus on proceeding to CTB negotiations in 1994, a Special Meeting of the States Parties to the PTBT was held at United Nations Headquarters in New York. These consultations reached the conclusion that a second Special Meeting should be held in early 1994 to take stock of progress on the test-ban negotiations. As the CD will end its 1994 winter session in March, this Special Meeting will probably be held in New York around the time of the Disarmament Commission in April.

It should be readily apparent whether or not the Conference on Disarmament is on track to deliver major results by April 1995. If it is on track, prudence would suggest maintaining a watchful eye while hoping for the best. But what can be done, short of wringing one's hands, if the Geneva talks are going too slowly?

The 1994 Special Meeting will have the option of arranging to reconvene the Partial Test Ban Treaty Amendment Conference in 1994. First convened in January 1991, the Amendment Conference has been in a dormant state. The Special Meeting has evolved as the mechanism for reactivating the Amendment Conference at the appropriate time. No one wants to reconvene the Amendment Conference only to have a repeat performance of the inconclusive 1991 session. In order to proceed, there will need to be a clear idea of what the Amendment Conference process can achieve that the Conference on Disarmament cannot.

In so far as a major aspect of the problem in Geneva was the reluctance at various times of France or China to contribute to CTBT talks, new headway might be possible at an Amendment Conference, since neither France nor China is a party to the PTBT. In their absence, the parties could negotiate and approve an amendment to the Treaty. That would be consistent with the precedent set when the 1968

Treaty on the Non-Proliferation of Nuclear Weapons was negotiated multilaterally in the absence of France and China.

However, it is clear that the absence of France and China would be a mixed blessing. Approval of an amendment requires the concurrent votes of the original parties—the United States, Russia, and the United Kingdom. Those nuclear Powers would, quite naturally, be reluctant to sign on to a CTB forever if they felt it would tie their hands while France and China went unfettered.

When those same three Powers held "Tripartite" test-ban negotiations on a comprehensive test ban in the late 1970s, they quickly dropped the objective of a permanent treaty, agreeing instead to aim for one of limited duration. That could be the solution for the Amendment Conference in 1994 or 1995. A two-step approach of this kind has been described by Dr. William Epstein of UNITAR in *The Bulletin of the Atomic Scientists*[3] and in *Disarmament Times*,[4] where he reported that a number of delegations were considering it favourably. The parties could approve a simple interim ban on underground testing while explicitly pledging their utmost efforts to conclude and bring into force a permanent CTBT prior to the expiration of the interim ban.

That approach would also help to address an acknowledged drawback of the Amendment Conference. To work out a fully-articulated CTB amendment, it would have to develop a committee structure, find a semi-permanent residence, acquire a secretariat, and raise funds to pay for the latter two. There is a natural predisposition in the international community to avoid that kind of redundancy with the already-established Conference on Disarmament. While aiming at an amendment by an interim agreement to ban underground testing in the Amendment Conference, the resolution of the verification and sanctions issues could be negotiated in the Conference on Disarmament. The amendment would include, as an integral part of the pledge to conclude the permanent agreement, a pledge to develop effective verification and sanctions protocols. In that way the Amendment Conference would be relieved of the responsibility of negotiating those technical complexities.

In legal terms, the effect of an interim step towards a CTB would be to codify formally and multilateralize a testing moratorium among the three nuclear-weapon States parties to the PTBT, and establish a formal obligation (as opposed to the original preambular promise) among all the parties to pursue vigorously a full-scope permanent treaty.

The main negotiating challenge for the Amendment Conference would be to set the length of the interim period. A number of considerations would have to be balanced judiciously. Non-nuclear-weapon States would want a meaningfully long moratorium period.

Expiration of the interim period should serve as a deadline for achieving the main objective. The United States has set for itself a deadline of 30 September 1996 for a "multilateral comprehensive ban on the testing of nuclear weapons". It claims the other nuclear Powers are prepared to work to that deadline. This objective should not be gainsaid, but the interim period might need to be somewhat longer to allow for the permanent ban to enter into force prior to the expiration of the interim agreement.

The Chemical Weapons Convention allows two years from formal agreement on a permanent ban to its entry into force, with the two years being used to establish the Organisation for the Prohibition of Chemical Weapons. A verification regime for a permanent nuclear test-ban is likely to be less difficult to establish than that for a ban on chemical weapons. Thus, it should be possible for a CTB agreement reached by October 1996 to enter into force, verification regime and all, by October 1998. By that reckoning, an interim agreement reached in 1994 could last just four years and still avoid a hiatus occurring between the lapse of the interim agreement and the entry into force of a permanent treaty.

To summarize, possible life-spans for the PTBT Amendment Conference to consider for an interim CTB agreement could range from as short as four to as long as ten years. The three original parties to the treaty would have a major voice in determining the length of the interim period since their concurrent votes are needed for majority approval of any amendment. But the non-nuclear world would have its say also, since a majority is needed to approve any amendment to the PTBT. Whichever term in force is ultimately adopted by the Amendment Conference, it should not take long to bring the agreement into force, since the entry-into-force provision of the PTBT binds the parties *simultaneously and collectively* to an amendment once it has been ratified by a majority of the parties, including the original parties. Each party would know in advance the full list of States.[5]

While the immediate effect of resorting to an interim agreement in the Amendment Conference would be to isolate France and China, it would also give them additional time to make their behaviour conform to that of the other nuclear Powers and to the will of the entire international community, which agreed without a vote to General Assembly resolution 48/70 on intensive negotiations in the Conference on Disarmament for an early CTB treaty. As long as they did not oppose the goal of achieving a permanent agreement within the specified time-frame, they should have no objection to the other nuclear Powers agreeing to stop testing in advance.

The permanent CTB agreement could be negotiated either as a brand-new agreement or as a further amendment to the PTBT. By amending the PTBT once again, the pending end-date for the interim period could simply be deleted, providing for a seamless transition to the permanent regime.

The verification and sanctions provisions could be added as protocols to the PTBT, as originally envisioned in 1991. Also, as several experts have recommended,[6] the issue of defining a nuclear explosion could be eschewed by simply utilizing the already accepted wording in the PTBT, which does not define a nuclear explosion. Either way, it is likely that the Conference on Disarmament will be the forum in which the all-important verification and sanctions provisions will be negotiated. France and China will have ample opportunity there to ensure that their views are taken into account. One hopes this will mean that they are prepared to be parties to the final agreement. They may prefer joining a new treaty or they may prefer acceding to the amended PTBT, because the latter would be automatically binding on all its parties when ratified by a simple majority including the three nuclear Powers who were the original parties to the PTBT. The interim agreement's pledge to pursue a CTB should not, and need not, prejudge the specific provisions of the final agreement.

Although the interim ban would be only the first step, it could be achieved before April 1995 and therefore could make the difference between success or failure at the 1995 NPT Conference. An interim CTB agreement would put beyond question the commitment of three of the nuclear-weapon States parties to the NPT. It would lock in recent progress on the test-ban issue. In addition, by utilizing that approach, it might be possible to avoid an extensive debate concerning the legal interpretation of article X.2 of the NPT that empowers the 1995 extension conference to decide whether the NPT should continue in force indefinitely or "shall be extended for an additional fixed period or periods". Such a debate, particularly if it should become acrimonious, could prevent a consensus decision and undermine the authority and credibility of the NPT.[7]

Promotion of the new international norm by the more than one hundred States which are parties to both the PTBT and the NPT would put the States not parties to the interim agreement under immense pressure to conform. As latecomers to the NPT, France and China would do their best to draw as little attention to themselves as possible on the test-ban issue. That would also give them time to consider their positions further in the CD negotiations and to become parties to the comprehensive test ban.

Thus, at the 1995 NPT Conference, the non-nuclear-weapon States parties to the NPT would have the unprecedented experience of joining forces with three of the nuclear-weapon States to advance the article VI objectives. That experience, much more than fine words in a final declaration, would give the non-nuclear-weapon States parties a real measure of confidence that a fair balance could be provided for the NPT. The answer to the question of the relative dominance of arms acquisition or arms control would, for the first time, come down decisively in favour of the latter.

It can be granted that a full-fledged CTB would be the best contribution to the future of the NPT. Ideally, the Conference on Disarmament would deliver that signed and sealed before April 1995. If not, the potential contribution of the PTBT Amendment Conference—an interim CTB agreement—must not be ignored. With the NPT's future at stake, it is a contingency well worth anticipating.

It is of course possible that the Conference on Disarmament may itself wish to adopt a two-step procedure, the first step consisting of an interim ban for a limited fixed period that would go into effect first, and the second step consisting of verification and sanctions protocols to be added when agreed. That procedure, however, might entail the risk of lengthy delays in obtaining the more than 120 new signatures and ratifications for an entirely new treaty, while the same result could be obtained more easily and readily by taking advantage of the PTBT amendment process.

Notes

The author wishes to acknowledge the extensive assistance provided in the preparation of her article by Aaron Tovish, Executive Director of Parliamentarians for Global Action.

1 UN General Assembly resolution 1910 (XVIII)

2 In the late 1960s and 1970s, United States delegations to multilateral negotiations on the NPT also stressed that a comprehensive test ban was the most important measure relating to the cessation of the nuclear arms race for the fulfilment of article VI.

3 William Epstein, "CTB: two paths, one goal", *The Bulletin of the Atomic Scientists*, vol. 49, No. 8, October 1993, pp. 3–4.

4 William Epstein, "Amendment Conference is best way to achieve early CTBT and help NPT", *Disarmament Times*, December 1993.

5 Parties to the PTBT as of 31 December 1993: Afghanistan, Antigua and Barbuda, Argentina, Australia, Austria, Bahamas, Bangladesh, Belarus, Belgium, Benin, Bhutan, Bolivia, Botswana, Brazil, Bulgaria, Canada, Cape Verde, Central African Republic, Chad, Chile, Colombia, Costa Rica, Côte d'Ivoire, Croatia, Cyprus, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Fiji, Finland, Gabon, Gambia, Germany, Ghana, Greece, Guatemala, Guinea-Bissau, Honduras, Hungary, Iceland, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kenya, Kuwait, Lao People's Democratic Republic, Lebanon, Liberia, Libyan Arab Jamahiriya, Luxembourg, Madagascar, Malawi, Malaysia, Malta, Mauritania, Mauritius, Mexico, Mongolia, Morocco, Myanmar, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Pakistan, Panama, Papua New Guinea, Peru, Philippines, Poland, Republic of Korea, Romania, Russian Federation, Rwanda, Samoa, San Marino, Senegal, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sudan, Suriname, Swaziland, Sweden, Switzerland,

Syrian Arab Republic, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, United States of America, Uruguay, Venezuela, Yemen, Yugoslavia, Zaire, Zambia.

6 George Bunn and Roland Timerbaev, "Avoiding the 'definition' pitfall to a comprehensive test ban", *Arms Control Today*, Vol. 23, No. 4, May 1993.

7 See William Epstein and Paul C. Szasz, "Extension of the nuclear non-proliferation treaty: a means of strengthening the treaty", *Virginia Journal of International Law*, Vol. 33, Fall 1993, p. 796.

Negotiating a Comprehensive Test-Ban Treaty

Approaching A Comprehensive Test Ban; A United States Historical Perspective

Glenn T. Seaborg and Benjamin S. Loeb

Background

Since the mid-195Os, a comprehensive test ban (CTB) has been one of the most persistent, yet elusive, objectives of arms control. In April 1954, Indian Prime Minister Jawaharlal Nehru proposed a "standstill agreement" on nuclear testing, the first initiative of its kind. Nehru's proposal came after a huge United States thermonuclear test contaminated wide areas of the Marshall Islands and caused casualties aboard a Japanese tuna trawler.

Placed on the defensive by international protests, United States President Dwight Eisenhower proposed to Soviet Premier Nikita Khrushchev in April 1958 that the Union of Soviet Socialist Republics join Western nations in examining the technical requirements for verification of a test ban. The resulting Conference of Experts came up with an elaborate control system that the experts claimed could

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adequately monitor all nuclear tests except very small ones underground and those in deep space. Encouraged by those optimistic findings, the United States, the United Kingdom and the USSR began tripartite test-ban negotiations, known as the Geneva Conference on the Discontinuance of Nuclear Weapon Tests, in October 1958. At the same time, they agreed on a one-year test moratorium.

The negotiations soon bogged down over verification issues, the principal one of which concerned on-site inspections of ambiguous or suspicious events. The Western powers wanted such inspections to prevent Soviet cheating. The Soviets rejected them, arguing that they were pretexts for Western espionage. Despite mutual distrust, the two sides continued negotiating and succeeded in narrowing their differences to the point where many expected that substantial agreement on a test ban might be reached at a May 1960 Big Four summit conference in Paris. Those hopes were dashed, however, by the recriminations that followed the downing over Soviet territory earlier in the month of a United States high-altitude reconnaissance plane. Meanwhile, the tripartite test moratorium continued on an informal basis.

President John F. Kennedy strongly advocated a CTB, primarily for its potential effect in limiting nuclear weapons proliferation. Accordingly, the Western side offered a number of concessions to the Soviet position at the Geneva Conference in March 1961. Important differences remained, however, over Soviet insistence on veto power in the control organization and over how many on-site inspections would be allowed on the soil of each nuclear Power.

On 1 September 1961, the Soviet Union, citing continued French tests and the international tension over Berlin, resumed testing with a massive series of some fifty atmospheric tests. On 15 September, the United States, in a hasty response, resumed testing underground. A United States atmospheric-test series, far less in total yield than the preceding Soviet series, began in April 1962. Before the American tests ended, the Soviet Union began another extensive series of its own. Test-ban negotiations meanwhile, had become deadlocked, and prospects for a test-ban treaty seemed dim.

But then the searing Cuban Missile Crisis of October 1962 seemed to draw Kennedy and Khrushchev closer together. Quickened correspondence between the two leaders led to brief negotiations in New York in January 1963 in a vain effort to resolve the differences about on-site inspections. In April 1963, Kennedy and British Prime Minister Harold Macmillan proposed to Khrushchev that they each send senior representatives to Moscow to talk directly with him. Khrushchev assented. A masterful and conciliatory speech by Kennedy at American University in Washington, D.C., on 10 June 1963 improved the atmosphere. After ten days of often intense negotiations, led by Averell Harriman for the United States and Foreign Minister Andrei Gromyko for the Soviet Union, the Treaty Banning Nuclear Weapon Tests in the Atmosphere, Outer Space, and Under Water, since referred to as the Partial or Limited Test Ban Treaty (PTBT or LTBT), was signed in Moscow on 5 August 1963.

Intent on gaining Senate approval by a wide margin in order to provide momentum for further arms-control steps, Kennedy assented to four "national security safeguards" put forward by the Joint Chiefs of Staff as the price for their concurrence: a vigorous programme of underground tests, continued readiness to resume atmospheric testing, high-level maintenance of the weapons laboratories, and improved capability to detect Soviet treaty violations. At Senate hearings, the treaty was opposed by weapons-laboratory scientists led by Edward Teller because of fear that the Soviet Union had gained military advantages in its 1961 and 1962 high-altitude, high-yield weapons tests. But such testimony was refuted by other experts, and the Senate gave its consent to ratification on 23 September by a vote of 80 to 19. The PTBT went into effect on 10 October 1963.

President Lyndon B. Johnson did not share Kennedy's enthusiasm for a comprehensive test ban, and elsewhere in the Government the mood turned against further limitations on testing. The basic consideration was a judgment by the Joint Chiefs of Staff, not counterbalanced by any strong voice elsewhere, that continued testing was necessary for the maintenance and further development of the United States nuclear deterrent, including development of an anti-ballistic missile system.

Beginning in 1965, consideration of a CTB came to be linked more and more to the debate about a non-proliferation treaty. The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) was signed in 1968 and went into effect in 1970. At the insistence of non-nuclear signatories, the super-Powers felt obliged to add to the Treaty an article VI, pledging that they would "pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date. . .". What many non-nuclear-weapon States have since regarded as the touchstone for judging compliance with article VI is negotiation of a CTB. Lack of progress toward a CTB was a bone of contention at NPT review conferences held in 1975, 1980, 1985, and 1990. A more severe test is due in the spring of 1995, when parties to the NPT must decide by majority vote "whether the Treaty shall continue in force indefinitely, or shall be extended for an additional fixed period or periods".

President Richard M. Nixon emphasized strategic-arms negotiations over test-ban negotiations, but at a 1974 summit meeting he and Soviet Premier Leonid Brezhnev signed the bilateral Treaty on the Limitation of Underground Nuclear Weapon Tests, referred to as the Threshold Test Ban

Treaty (TTBT), banning underground weapons tests above 150 kilotons, a limit widely criticized as too high. In May 1976, Premier Brezhnev and President Gerald Ford signed the Peaceful Nuclear Explosions Treaty (PNET) which imposed a similar limit. Ford delayed submitting the two treaties to the Senate, reportedly because of a challenge for the Republican Party's presidential nomination by California Governor Ronald Reagan, who was generally critical of arms- control agreements.

President Jimmy Carter also did not push ratification of the TTBT and PNET because, as he stated in his first news conference as President, he wished "to proceed quickly and aggressively" with a CTB. Formal tripartite (USSR, United Kingdom, United States) negotiations toward that end resumed in Geneva in October 1977. Good progress was made in the first eighteen months, but then a gradual erosion of political will ensued, particularly in the United States. It began when President Carter was made aware of the strength of opposition to a test ban among Department of Energy and Pentagon officials. The CTB negotiations were then de-emphasized for an extended period after Carter also became aware that it was going to be more difficult than previously supposed to reach his goals in SALT II, which had a higher priority for him than a CTB. Finally, a series of external events ensued, most particularly the Soviet invasion of Afghanistan in December 1979, that adversely affected the international climate. Although the test-ban negotiations continued, there was little forward movement after Afghanistan. The negotiations were suspended a week after Ronald Reagan defeated Carter in the 1980 election.

Intent on augmenting and modernizing the United States nuclear arsenal, Reagan's Administration relegated a CTB to the status of an "ultimate goal", emphasizing instead various problems in verifying the TTBT and PNET. After his accession to power, Mikhail Gorbachev initiated a unilateral

Soviet moratorium on tests which lasted from 6 August 1985, the twentieth anniversary of the Hiroshima attack, until February 1987. During 1986 both Houses of Congress passed non-binding resolutions urging President Reagan to negotiate a CTB. The House of Representatives went further, voting in three successive years to deny funds for tests of more than one kiloton. Although those actions did not become law, they signalled a new militancy on the subject of testing by many members of Congress that has lasted until the present day.

President George Bush's attitude toward a CTB was similar to Reagan's; he characterized it as a "long-term objective". Like Reagan, Bush also concentrated on TTBT and PNET verification issues. The two treaties were finally ratified in 1990, following some cooperative US-Soviet endeavours regarding verification and the negotiation of an elaborate 107-page verification protocol. Meanwhile, the international community was becoming impatient. Each year from 1985 to 1992, the United Nations General Assembly passed a resolution urging the nuclear-weapon States to make progress toward a comprehensive test ban.

In 1991, a widely supported initiative to amend the PTBT so as to make it a CTB was blocked by the prospect of United States and United Kingdom vetoes. Then, in 1992, France joined Russia in declaring a moratorium on tests and in implying that continuation of the moratorium would depend on whether the United States followed suit. While continuing to oppose a moratorium, the Bush Administration announced a modification of its testing policy whereby it would limit the number of tests each year to six and would mandate that United States tests be carried out only for safety and reliability purposes.

Clinton's Legislative Inheritance

The Bush Administration's announcement of its intent to limit testing did not satisfy Congress, which, in

September 1992, enacted complicated legislation containing the following main points:

1 There was to be an immediate nine-month moratorium on United States testing, lasting until 1 July 1993.

2 After 30 September 1996 all United States testing was to cease unless another nation tested after that date.

3 Between those two dates a maximum of fifteen tests —five per fiscal year—would be permitted for limited purposes (a maximum of one each year for reliability, one for the United Kingdom, the rest involving specified safety features).

4 Such tests could be conducted only if the President submitted a report to Congress containing:

a A schedule for CTB talks with Russia and a plan for achieving a CTB by 30 September 1996.

b With respect to each proposed safety test, a cost/benefit analysis and plans for installing the improvement tested into warheads that would be in the stockpile after 30 September 1996.

c Statements relating each proposed reliability test or United Kingdom test to United States national security.

5 The specified tests could then proceed beginning no sooner than 90 legislative days following submission of the President's report, provided that in the interim Congress did not pass a joint resolution expressing disapproval of the tests.

The proponents of the legislation stated that an immediate pause in United States testing was needed to respond to the self-imposed moratoria instituted by Russia and France and to encourage them not to resume testing, and that the United States had to commit itself to seek a CTB if there was to be any moral force behind its efforts to halt proliferation worldwide.

President Bush called the testing restrictions "highly objectionable". They were attached, however, as an amendment to a water and energy appropriations bill and, reportedly because the measure provided funds for the superconducting supercollider in Texas, a state considered crucial to his reelection chances, the President signed the bill on 2 October 1992.

On the other hand, the testing restrictions imposed by the legislation accorded well with President Clinton's previously-stated views. On at least two occasions during his election campaign, Clinton had indicated that he supported a CTB because it would help to restrain proliferation. After he became President, Clinton allowed the first deadline under the testing legislation, 1 March 1993 (90 days before the Congressionally–decreed moratorium would expire), to pass without requesting test authority from Congress. Then, in April, Clinton and Russian President Boris Yeltsin agreed at their summit in Vancouver that "negotiations on a multilateral nuclear test ban should commence at an early date".

Despite Clinton's own apparent inclination towards bringing testing to a close, there were early signs that his Administration was far from united on the issue. On 3 May, Under-Secretary of Defense John Deutsch said in Congressional testimony that "the Department of Defense supports the resumption of nuclear testing at the earliest possible moment". Pro-testing sentiment was reported to be strong as well within the Energy and State Departments, and in June 1993 a report to Congress requesting test authority was being prepared and discussed in the Administration.

Perhaps sensing that a CTB might occur at some future time, Defense officials also began pushing for a definition of such a treaty as permitting unlimited testing of devices with yields of less than one kiloton. One contention was that, since there were ways of concealing such smaller tests, they might as well be allowed. When reports circulated that the Clinton Administration was seriously considering such a proposal, there were sharp cries of Congressional outrage. The senators who had sponsored the 1992 legislation—George Mitchell (D–ME), James Exon (D–NE), and Mark Hatfield (D–OR)—wrote to the White House on 30 April 1993 that the proposal would not be consistent with the law, would "suggest a lack of commitment.... to pursue a truly comprehensive test ban", and would "undermine US efforts to end the threat of nuclear weapons and their proliferation". A week later, a similar letter was sent by 38 members of the House, led by Congressman Mike Kopetski (D–OR). Senior officials of the Administration then apparently met and, with the concurrence of Secretary of Defense Les Aspin, squelched the one-kiloton proposal.

Questioning the Need for United States Tests

Early in Clinton's term, questions began to be raised in Congress about the wisdom of that part of the 1992 legislation that permitted a limited number of tests. The opinion grew that there was, in fact, no persuasive need for *any* tests, especially when balanced against the momentum that could accrue to the quest for a CTB and to the non-proliferation regime by not testing. Congressional skepticism was based largely on a closer examination of the need for those permitted tests which were intended to assure the safety and reliability of stockpiled weapons.

The policy of testing only for safety and reliability had been initiated when the Bush Administration announced in July 1992 that it would restrict tests to those two purposes. The argument that safety tests were needed had already received a strong impetus from a 1990 study undertaken for the House Armed Services Committee by a panel of three senior physicists headed by Sidney Drell of Stanford University. The Drell Panel found that the safety problem—"the risk of unintended, accidental detonations that could result in dispersing plutonium into the environment in potentially dangerous amounts, or even generate a nuclear yield"—was greater than previously supposed. They recommended that completely new "safety optimized designs....be studied aggressively". Specifically, the Panel recommended that all weapons in the stockpile be equipped with modern enhanced nuclear detonation safety (ENDS) systems, and that all nuclear bombs loaded onto aircraft be built with insensitive high explosives (IHE) and fire-resistant pits (FRP).[1] Those three safety features were then specifically incorporated into the 1992 legislation. Safety tests permitted by the law needed to involve incorporating one or more of the features into weapons the United States planned to retain in its stockpile after 1996.

The skepticism that arose in the spring of 1993 regarding safety tests was based in large part on statements by the armed services themselves that they did not intend to incorporate safety improvements validated by the tests into stockpiled weapons. Defense spokesmen in both the Bush and Clinton Administrations made it clear that in some instances there was not sufficient evidence to warrant the changes, and that in others the cost of incorporating the improvements would be out of proportion to the modest benefits expected. Drell himself commented in June 1993 that to perform safety tests without implementing the results "would have very little intellectual merit".[2] A further persuasive contention was that it would be illegal under the 1992 legislation to test safety improvements when there was no serious intent to incorporate them into stockpiled weapons.

The need to test for reliability had been advanced during the Carter Administration as the principal argument against the CTB which the President was trying to negotiate. It was pointed out then that, over time, stockpiled weapons might be subject to deterioration from corrosion and chemical changes and that selective testing could detect such changes. Furthermore, as weapons had to be replaced, some nuclear testing was needed to assure that the replacements were reliable. Pro-testing advocates used similar arguments to persuade Congress to allow for three reliability tests in the 1992 legislation. In response, CTB advocates pointed out that nuclear testing had seldom been used to check the reliability of already deployed weapons. Instead, stockpile reliability had been maintained quite adequately by disassembling a selected sample of weapons, subjecting them to careful non-nuclear tests, and remanufacturing those models proven to be reliable.3

In view of the weakness of the arguments for safety and reliability tests, there was increasing belief in Congress and elsewhere that the arguments were disingenuous and that those who advocated testing had other purposes in mind. One was the development of new weapons. Indeed, the Clinton Administration's Energy Department budget for fiscal year 1994 provided for a study of a new generation of small weapons, "mini-nukes" and "micro-nukes", intended for use in Third World conflicts. (Congress subsequently denied funds for this purpose.) A variety of other new, special-purpose weapons designed to meet the needs of a post-cold war world with multiple trouble-spots are also being promoted within the weapons establishment. They include earth-penetrating warheads designed to destroy enemy command centres.

All the arguments for further tests may well have been, to some extent, a rationalization for a pre-eminent and driving purpose, namely, to keep weapons-laboratory scientists employed and to maintain the laboratories' technical competence. While such objectives are not without merit, they appear to have little political appeal under today's international and budget conditions and are therefore seldom publicly avowed. The problem of maintaining the viability of the laboratories is not being ignored, however. It is being addressed by finding related work for them, such as in military endeavours not requiring nuclear tests, or as a national scientific resource to work in partnership with industry on civilian problems.

Potential Harm from United States Tests

In addition to the evidence that there was little persuasive reason to conduct even the few tests allowed by law, there appeared in the spring of 1993 to be a strong reason not to test at all, namely, that even a single test by the United States might have devastating effects on prospects for a CTB and on the delicate balance of the non-proliferation regime.

It was reasoned that if the United States tested, the other four nuclear powers were likely to test as well. Internal divisions similar to those in the United States were known to exist in Russia and France. Although Presidents Yeltsin and Mitterrand both publicly supported a CTB, there were strong pressures from military and conservative elements in both their countries for resumed testing. A French test series, once begun, seemed likely to be protracted, involving development of warheads for new missile systems. The British also were known to have a list of desired tests, and would, in the event of a United States test, press at least for the number authorized by Congress under the 1992 legislation. In addition, Chinese tests were regarded as probable, no matter what other nations did. Thus, in the wake of a test by the United States, one could anticipate a contagion of testing involving all of the nuclear Powers.

Some part of that activity seemed likely to still be in progress when the NPT extension conference took place in 1995, making a long-term extension of the NPT very unlikely. Furthermore, continued testing by the nuclear Powers would send a message to non-nuclear-weapon countries that nuclear weapons were important and legitimate symbols of power and influence. Such a message could only add to the nuclear-weapons ambitions of all countries for whom a nuclear-weapons capability was a near-term or long-term prospect. Although it is possible to fashion crude nuclear weapons without full-fledged tests, the emergence of new nuclear-arms rivalries could well lead to a quest for more sophisticated devices whose development requires testing. Thus, the chain of consequences following a United States test might well damage prospects for a sustainable CTB.

"No First Test"

Impelled, then, by the lack of a persuasive reason to test and by the threat that any United States tests might pose to CTB and non-proliferation objectives, sentiment grew in Congress in the spring of 1993 for the adoption of a "no-first-test" policy by the United States. During June several groups in Congress were reported to have met with Administration officials to push that position. Those efforts had apparently borne fruit when, on 3 July, President Clinton announced that the United States would extend its test moratorium "at least through September 1994 as long as no other nation tests". Perhaps with a view to deterring China from its apparent intention to test, the President added that if the moratorium was broken by another nation he would direct the Department of Energy "to prepare to conduct additional tests while seeking approval to do so from Congress".

In explaining his decision, Clinton said the Administration had determined that weapons in the current stockpile were "already safe and reliable". Acknowledging that additional tests could help the United States to prepare for a CTB and provide some further improvements in safety and reliability, the President said that such benefits were outweighed by the fact that the tests would undercut United States non-proliferation goals. More specifically, Clinton was reported to have made his decision with two goals in mind—achieving a CTB by 1996 and achieving an indefinite extension of the NPT at the 1995 review and extension Conference.[4] The President's decision meant that, according to the 1992 legislation authorizing no more than five tests per fiscal year through 1996, a maximum of only ten tests would now be permitted, not the original fifteen.

Other countries' responses to the action by the United States were mixed. Russia formally welcomed the moratorium extension and said it was prepared to proceed with CTB negotiations. At the same time, however, the Russian military was reported to favour testing if any other nation tested. The French response was similarly ambiguous, reflecting a split between President Mitterrand, who favoured a CTB, and some members of the newly-elected parliament who argued that France needed to test in order to finish developing warheads for new air-launched and submarine-launched missiles. The British acceptance of the United States decision was grudging at best, the Defence Minister stating that there were advantages to testing the safety and reliability of weapons. Prime Minister John Major predicted that if China or Russia tested, both the United States and Britain would do so as well. China's response was characteristically noncommittal; and that was soon to take on more sombre significance.

The Chinese Test

On 5 October 1993 (Chinese time) the Chinese conducted an underground test despite appeals that it not do so by the United States and some twenty other nations. Estimated at some 60 to 90 kilotons, it was the first nuclear test in the world in more than a year.

President Clinton responded to this breach of the international moratoria much as he had said he would when he extended the United States moratorium on 3 July. He did indeed direct the Department of Energy to begin limited preparations for United States testing. He did not, however, carry out his previously announced intent of seeking immediate approval from Congress for tests. Instead, the Administration issued a written statement reaffirming its goal of completing a CTB by 1996 and urging China to refrain from further tests and to "carry through on the commitment China has made to Secretary of State Christopher to seek to negotiate a CTB by 1996, a goal that we share". (A meeting between Christopher and Chinese Foreign Minister Qian Qichen had taken place in Singapore in July.)

The statement said that the President's ultimate decision on whether to test would be based on "fundamental United States security interests", taking into account "the contribution further tests would make to improving the safety and reliability of the United States arsenal in preparation for a CTB", the extent to which all nations responded to the United States appeal for a global moratorium, progress in the CTB negotiations, and the implications of further tests on broader non-proliferation objectives.

On the day of the Chinese test, 23 senators, led by Carl Levin (D-MI), wrote to Clinton saying that for the United States "to precipitously conduct a test" in response to a Chinese test "would be highly inappropriate and counterproductive" because such an action would incite others to test and would undermine the goals of the Administration and Congress to reach agreement on a CTB and on an indefinite extension of the NPT. Other members of Congress contended that the Chinese test provided no additional national security reason for United States testing.

The reaction of the other declared nuclear Powers tended to confirm the view expressed both by President Clinton and by members of Congress to the effect that a single Chinese test would not induce others to follow suit unless the United States also tested. Thus, a Russian spokesman said his country regretted China's test, but added that Russia's decision on whether to resume testing depended in large part on "the reaction of the other nuclear powers". France stated that it planned to "contact the American, British, and Russian governments to study the consequences" of the Chinese test. In a separate statement, President Mitterrand said he opposed a resumption of French testing, but that "if countries other than China were to take the initiative, France would be forced to continue its own tests...". The British position apparently remained as before—it was known that they would like to conduct certain tests but, realistically, they could not expect to test unless the United States did so, because British tests required the use of United States facilities and the authorization of the United States Congress.

China itself responded to the mini-tempest its test had aroused by issuing a reassuring statement. On 7 October, a Chinese Foreign Ministry spokesman pointed out that, of the five declared nuclear-weapon States, China had conducted the fewest tests (a correct statement, according to most estimates). The spokesman then added that China supported "the early conclusion through negotiation of a comprehensive nuclear test ban treaty" and hoped it could be concluded "no later than 1996", thus confirming the commitment made to United States Secretary of State Christopher earlier in the year by China's Foreign Minister.[5]

Momentum Towards a CTB

Notwithstanding China's evident intention to test again, and internal divisions on test-ban questions within other countries, the five nuclear Powers began informal talks in July 1993 to lay the groundwork for formal CTB talks. The Geneva-based multilateral Conference on Disarmament (CD) decided on 10 August to authorize such formal talks, beginning when the CD reconvened in January 1994.

After the momentary perturbation caused by the Chinese test of 5 October, forward progress toward a CTB resumed. On 19 November 1993 the United Nations Committee on Disarmament and International Security adopted by consensus a resolution calling for the negotiation of a CTBT and asking all States to support the negotiation. The action was significant in that it marked the first time all nuclear Powers had been in agreement on this subject. On 16 December the United Nations General Assembly added its seal of approval of the resolution, also by consensus (resolution 48/70). During December a sub-committee of the Conference on Disarmament (CD) held three weeks of open discussions in Geneva in preparation for the CD's negotiations on a CTB. Those negotiations began in Geneva on 25 January 1994.

Meanwhile, some in United Nations circles are arguing that progress toward a CTB may be abetted by reconvening the Amendment Conference that in January 1991 considered amending the PTBT by banning all underground tests. It is argued that action by the amendment route would be binding on several near-nuclear States that are parties to the PTBT but not to the NPT, since a decision can be taken by a simple majority vote of PTBT parties, including the votes of Russia, the United Kingdom and the United States. On the other hand, action by the Conference on Disarmament requires a consensus of all its members. Thus it is contended that action by the Amendment Conference process is more likely to be completed by the time of the NPT extension conference in the spring of 1995, and hence to gain votes for a significant extension of the NPT, than are negotiations in the Conference on Disarmament, which may involve complicated problems of verification. Such action by the Amendment Conference would not preclude parallel action by the Conference on Disarmament on a new comprehensive test-ban treaty[6]. Those who oppose the Amendment Conference approach contend that it would unnecessarily add to the complexity and costs of the process of achieving a CTBT.

The United States Congress has continued to exert pressure on behalf of a CTB. On 5 November 1993, 47 senators, led by John Glenn (D-OH), sent a letter to the French National Assembly urging it "to maintain France's current nuclear test moratorium and to work toward the earliest possible conclusion" of a CTB. In approving the defense authorization bill for fiscal year 1994, Congress voted to prohibit the Department of Energy from conducting new research and development that would lead to the production of "mini-nukes"—warheads with yields below five kilotons. Congress also rescinded one of the four national security safeguards adopted in connection with the ratification of the Partial Test Ban Treaty in 1963, namely, the one that undertook to maintain the capability of the United States to resume atmospheric testing on short notice. Under the authorization bill, no money may be spent for this purpose.

Outlook

The outlook for a CTB shares the uncertainty that envelopes so much of the world's political landscape. In mid-1993, portents seemed very favourable for a speedy and successful CTB negotiation. Later in the year, however, there were some disturbing developments that seemed to threaten this prospect. One was the indication that Ukraine might seek to retain some 46 modern SS-24 strategic missiles, all of which were presumably targeted at the United States. Another was North Korea's reluctance to accept inspection procedures under the NPT and its threat to withdraw from that Treaty, a posture that had the potential for sparking a regional nuclear arms race. Still another was the uncertainty about Russia's future course in international affairs after the Parliamentary elections in December 1993 in which reactionary, expansionist candidates received a large number of votes, apparently including a majority of those cast by members of the armed forces.

By early 1994, each of these situations seemed less threatening. In a trilateral statement issued following a summit meeting with Presidents Clinton and Yeltsin in January 1994, President Kravchuk of Ukraine undertook to transfer his country's nuclear weapons to Russia in exchange for economic compensation from Russia and security assurances from both the United States and Russia. North Korea withdrew its threat of seceding from the NPT and agreed in February 1994 to permit IAEA inspections of its declared nuclear facilities, moves conducive to resolving the crisis in that part of the world. And finally, Russia's posture in international affairs since its disturbing election has continued to be generally constructive. It must be recognized, however, that in these, as in other situations, further threats to the international order remain possible.

The fact that unsettling situations can and do arise may only serve to reinforce a recognition by the nuclear and near-nuclear Powers that their security rests more on restraining proliferation than it does on any purported advantages to be gained from additional nuclear tests. Thus, notwithstanding all the trouble spots, there is reason to hope that the CTB negotiations in Geneva will proceed well, leading to a favourable outcome at the NPT extension conference in the spring of 1995, and a real possibility for a CTBT to be in force by the target date established by the United States Congress, namely, 30 September 1996, or soon thereafter.[7]

Should things work out in this fortunate way, historians looking back on the achievements may well distribute credit rather broadly among the participants. There were, however, two contributions, in particular, that have been indispensable.

The first was the persistence of the non-nuclear-weapon nations, dating from the NPT negotiations in the 1960s, in identifying a CTB as a pre-eminent goal and in making clear that their own cooperation in a worldwide non-proliferation settlement was contingent on the earnest pursuit of a CTB by the nuclear Powers. Thus, they forced the inclusion in the NPT of article VI; repeatedly implied to the nuclear States at NPT review conferences that their lack of progress toward a CTB constituted a violation of article VI; cast repeated and overwhelming votes at the United Nations in favour of a CTB, and made it clear that their attitude toward an NPT extension at the 1995 conference would be affected by the CTB question. Most pointedly, as already indicated, they all but took matters into their own hands by calling the 1991 Amendment Conference where, but for the prospect of United States and United Kingdom vetoes, they stood ready to change the PTBT into a CTB. That insistent message over a twenty-five-year period about the key importance of a CTB to international opinion has left a strong imprint on the attitudes of the nuclear nations and may well have weakened the political influence of pro-testing elements within the respective governments.

The second major development we would cite as being of key importance to the present outlook is the recent change of the United States role from that of a recalcitrant to that of a leader in seeking an end to testing. That change of position owes much to the emergence of the Congress as a driving force, culminating in the stern legislation of 1992. After a hesitant start, the Clinton Administration is now acting in tandem with Congress on those matters. The influence of the world's only super-Power on the decisions of other nations, while not controlling, is clearly important.

Notes

Dunbar Lockwood of the Arms Control Association provided valuable information and guidance during the preparation of this article.

1 House of Representatives, Armed Services Committee, Report of the Panel on Nuclear Weapons Safety, December 1990, p. 32.

2 *US News & World Report*, 28 June 1993, p. 31.

3 Richard L. Garvin, "Atoms do not age," *Bulletin of the Atomic Scientists*, October 1993, pp. 10–11; and J. Carson Mark, "Do we need nuclear testing?" *Arms Control Today*, November 1990, pp. 12–15.

4 *Arms Control Today*, September 1993, p. 20.

5 *Arms Control Today*, November 1993, p.20.

6 See William Epstein, "Amendment Conference is Best Way to Achieve Early CTBT and Help NPT", *Disarmament Times*, 21 December 1993, p. 4.

7 One must point out that such success is by no means assured. Thus, John D. Holum, Director of the United States Arms Control and Disarmament Agency, in an address at the annual dinner of the Arms Control Association on 13 December 1993, noted that "....some states may be opposed to a CTB, at least for now.... They may be committed to negotiation, but not necessarily to an early conclusion....Conceivably we could arrive at the NPT conference in April 1995 with only limited progress. [This] would make it very difficult to achieve our NPT objectives."

Non-Proliferation and Issues of Regional and Global Security

Regional Security and Nuclear Non-Proliferation

Nabil Elaraby

The question of the denuclearization of Africa is one of the issues to which Egypt attaches great importance. The first resolution calling for the denuclearization of Africa was adopted by the Summit of the Organization of African Unity, when it met in Cairo in 1964. Ever since then, my country, along with the whole continent, has worked hard to achieve that goal.

Now we have a draft text of an African nuclear-weapon-free-zone treaty. Although there is some final work to be done on this draft, the meeting that took place in Harare from 5 to 9 April 1993 went a long way towards providing the basis for a treaty. This article discusses some of the issues which relate to the finalization and the implementation of that draft African nuclear-weapon-free-zone treaty.

The regional approach has been endorsed by the Treaty on the Non-Proliferation of Nuclear Weapons. The Secretary-General has, on more than one occasion, recommended the regional approach as an appropriate way to tackle

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a wide range of issues relating to international peace and security. In the course of drafting the NPT it became apparent that not all regions are alike, and that it is possible, without in any way prejudicing the basic principles and provisions of the NPT, for any group of States to be allowed and, in fact, encouraged to formulate specific arrangements for their region to complement those specified in the global Treaty.

The first region that adopted the regional concept was Latin America and the Caribbean. The Treaty for the Prohibition of Nuclear Weapons in Latin America, known as the Treaty of Tlatelolco, was concluded in 1968. It prohibits the testing, use, manufacture, production or acquisition by any means, and the receipt, storage, installation, deployment or any form of possession, of any nuclear weapon in the area defined by it.

The African States called for the establishment of a nuclear-weapon-free zone in 1964, yet no practical steps to implement the concept were taken until there were clear prospects for participation in this endeavour by a democratic, nuclear-weapon-free South Africa.

The draft African nuclear-weapon-free-zone treaty, as it stands now, provides a clear endorsement of the need to put into effect a regional approach to disarmament. That approach is important as a way to build a fuller, more comprehensive edifice to ensure that the non-proliferation regime will be stronger. While the basic obligations in the text of the new African draft treaty emanate from the NPT, other, additional ideas have been developed to complement those NPT obligations in accordance with the particular needs of the region. A regional approach recognizes that each region has its own characteristics. One cannot deal with Latin America in the same manner as with Europe or the Middle East. Especially when it come to levels of military force and the prohibition of weapons of mass destruction, the situation clearly differs from one country to another and from one region to another. That is the rationale behind the concept of using a regional approach to supplement the global approach.

It is anticipated that the denuclearization of Africa will have a positive effect on adjacent regions. A spillover effect, whereby the States in adjacent regions might agree to stricter provisions than those specified in the NPT to ensure non-proliferation in their region, becomes more of a possibility in view of the added sense of security that the nuclear-weapon-free zone in Africa will create. Clearly, the Middle East is one of the areas which may benefit in this manner.

Another element related to the concept of regionalism is the question of security assurances for non-nuclear-weapon States. That concept was not incorporated in the text of the NPT when it was drafted. Many States sought throughout the negotiations in the Conference on the Committee on Disarmament (CCD) in Geneva to add security assurances to the text of the Treaty. While those efforts did not succeed, there was general agreement in May 1968, when the Treaty was endorsed by the General Assembly, that security assurances were needed and that the Security Council would be required to provide them, even though they would not be incorporated in the text of the NPT itself.

Consequently, on 19 June 1968, the Security Council adopted resolution 255, which provided certain security assurances. The resolution aimed at assuring Member States that in case of a nuclear attack on any of them, the Security Council would take action in accordance with Article 51 of the Charter.

Clearly, such a general exhortation is not enough. In the first place, only three nuclear-weapon States sponsored and supported the resolution: the Soviet Union, the United Kingdom and. the United States The People's Republic of China was not seated in the Security Council until 1971, and there were five abstentions, including France. Second, resolution 255 does not provide anything new by way of assurances. It only reiterates the existing provision of the Charter, it does not extend the concept of security to ensure assistance in the various fields where it could be needed, whether in the technical, the military, or even in the environmental field. Considering the experience of Chernobyl, one can conclude that whenever there is a breakdown in nuclear safety, it should be possible to expect the international community to provide assistance as required. Consequently, Security Council resolution 255 does not confer more security than is already provided by article 51 of the Charter.

Another relevant factor is that NPT has not, after 24 years, become a universal treaty. Several key States have refused to become parties.

While one might wish to extend assurances to the entire world by strengthening and updating resolution 255 (1968), it is not clear whether there can be any progress in doing that in the near future. However, by concentrating on a single region—let us say Africa or the Middle East—it should be possible to secure such an undertaking from the Security Council. Consequently, the establishment of a nuclear-weapon-free zone in Africa would contribute positively to the possibilities for providing security assurances for Africa. It would also start a process which could well be extended later—to other regions and to additional weapons systems.

With respect to the text of the agreement, there are two important points to discuss relating to its implementation: the question of compliance and the question of verification.

With respect to compliance, every treaty contains the general expectation that it will be implemented in good faith and that there will be full compliance with all its provisions. However, it is also desirable to have some mechanism to ensure compliance.

The question of verification is closely related to the issue of compliance. The NPT does not have a mechanism for verification within its own provisions and is dependent on the International Atomic Energy Agency to carry out that function. But one should keep in mind that it was drafted and adopted in the 1960s. Now, in the 1990s, another important legal instrument, the chemical weapons Convention, has been prepared in a form that the international community has agreed was necessary to establish a mechanism for verification incorporated in the treaty itself. Consequently, we now have an elaborate system of verification emanating from the text of the chemical weapons Convention, with a secretariat at the Hague which will include chemical-weapons inspectors to carry out the functions specified in the Treaty as soon as it comes into force.

The verification required under IAEA safeguards agreements depends primarily on the facilities which each State party to the NPT identifies on its own territory, and something similar is being worked out for the African nuclear-weapon-free zone as well.

I believe that we require something similar to the CWC arrangements in the Hague for the implementation of the African nuclear-weapon-free-zone treaty once it comes into force. There should be some kind of secretariat, either providing an independent African mechanism or perhaps associated with an existing entity in Africa, or its functions could, perhaps, be incorporated with those of the International Atomic Energy Agency. One way or another, it is necessary to have a verification system that will ensure total and full compliance with the provisions of the treaty.

It has been suggested that regional on-site inspections to check against the production and deployment of all weapons of mass destruction could be organized through a general verification system that would be binding on the parties to a range of different treaties, on chemical weapons, biological weapons and on nuclear weapons in various zones that would be free of all such weapons. In that type of arrangement, States could inspect the other States in the region so that they could all be part of regional inspection teams, in cooperation with the United Nations and its related agencies. It would certainly be desirable to have a comprehensive mechanism for inspection and for verification of compliance, not only with this particular treaty but with others as well. It is necessary to look towards the future to develop some type of verification system that would either cover all disarmament measures with sections for the nuclear, the chemical and the biological treaties, or that would have some link or common data bank.

Any such verification system would entail a number of measures. First of all, those matters which concern the maintenance of international peace and security should have a link with the Security Council—to supervise monitoring and to address the question of possible action in case of non-compliance. What would be appropriate would depend on the weapons system involved and the gravity of any given violation. The verification system developed would also need to address the question of the sovereignty of States, because any verification system is bound to entail measures which will include on-site inspection. At a future date, the international community would be wise to consider seriously the establishment of such an international verification agency.

On the question of the peaceful uses of nuclear energy, there are provisions within the African nuclear-weapon-free-zone treaty for strict regulation and control. That will be partly the function of the African Commission on Nuclear Energy (AFCONE), which is to be set up. The Commission is expected to work in close collaboration with the International Atomic Energy Agency (IAEA).

Another related development that the creation of a nuclear-weapon-free zone in Africa may advance is that once there is a treaty on the denuclearization of Africa, it will become increasingly possible to envisage a scenario for working towards establishing a zone free from all weapons of mass destruction in the continent. The experience of the last few years has shown that we cannot really single out one specific area of weapon while neglecting other related types of armament if we are to strive faithfully to provide an increasing level of global security.

Nonetheless, by starting with one category of weapon and moving on to others, it should be possible to create momentum and a benign spiral wherein one success tends to facilitate and demand another.

The chemical weapons Convention, which now has the signatures of more than 150 States, prohibits the development, production, acquisition, retention, stockpiling, transfer and use of chemical weapons. It requires each State party to destroy the chemical weapons and chemical weapons production facilities under its jurisdiction and control, as well as any weapons it has abandoned on another State's territory, and it prohibits parties from engaging in any military preparations to use chemical weapons, or from assisting or encouraging others to engage in any of the proscribed activities. That Convention is also extremely important, not only because it will do away with an entire class of weapons of mass destruction, but also because it incorporates a flexible verification system. The convention was negotiated by countries from all parts of the world and will be implemented in the same way for all States in all regions.

In addition, there are biological weapons and the possibility of the development of radiological weapons. Perhaps in the future other kinds of weapons will be developed. Thus it is important to take into consideration the hope that the denuclearization of Africa will have an effect on adjacent regions and will also lead towards other measures to prohibit the development and maintenance of all weapons of mass destruction.

Clearly the elimination of nuclear weapons is extremely important and should be viewed as the highest priority. There is no doubt that this is the most important disarmament measure that we can envisage at this time. Closely related to the question of nuclear disarmament is the question of obtaining a comprehensive test-ban treaty. The conclusion of such a treaty will undoubtedly consolidate all efforts to strengthen the non-proliferation regime, including the denuclearization of Africa. That is extremely important because such a CTBT would be global in scope. It would have far-reaching effects on the entire international military-political climate. Also, the importance of its conclusion is closely tied to the need to stop the proliferation of nuclear weapons to other countries and to implement article VI of the NPT to work towards "effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament", especially with a view to preventing the qualitative upgrading of nuclear weapons which are not destroyed or dismantled during a phased disarmament process.

As a general rule, a State is not legally bound by an international instrument unless it is a party to it—except as regards the universal norms of customary international law as in the Charter of the United Nations. Customary international law may also emerge when there is a treaty which is universal, with a large majority of countries throughout the world adhering to it and recognizing its fundamental value to international peace and security. In such a case, certain obligations, with the passage of time, come to be considered customary rules which are at least politically binding on non-parties, as well as on parties. Some scholars say that because there are so many parties to the NPT, it has established such a morally-binding norm to prohibit the acquisition of nuclear weapons. However, others point to the fact that the NPT has a very serious flaw in that it allows five countries to be nuclear-weapon States. Consequently, it cannot be stated that the NPT has launched into clear international legal practice the norm for which it was established. I think this is true at present, but that the norm of non-proliferation can be developed into a global norm for the future if the basic flaw in the NPT can be corrected, or at least mitigated.

For an Egyptian to see the draft text of the African nuclear-weapon-free-zone treaty provides a sense of real gratification. Not only was such a treaty the subject of the first resolution adopted in the OAU meeting in Cairo in 1964, but also, we in Egypt realize the importance of this disarmament measure, and we are grateful to all those who contributed to its preparation. We realize that without South Africa having taken the historic step of becoming a party to the NPT, we could not have established such a zone, nor could we have agreed upon a text that will cover the whole of Africa for the creation of the denuclearized Africa. We realize also that we should celebrate this achievement.

The question has been raised as to whether it is possible for Egypt to become a party to a nuclear-weapon-free-zone treaty in Africa without the establishment almost simultaneously of a nuclear-weapon-free zone in the Middle East. In fact, since Egypt is a party to the NPT, with all the NPT obligations applicable to it, I believe that Egypt will be willing to come into the African nuclear-weapon-free zone from its inception. Consequently, I am sure that my country would be more than happy to host a meeting for the signature of this important disarmament measure.

Non-Proliferation and Issues of
Regional and Global Security

A Nuclear-Weapon-Free Zone in the Middle East and Effective Verification

Shalheveth Freier

Introduction

Israel's policy positions on a nuclear-weapon-free zone (NWFZ) in the Middle East are closely tied into the peace talks which are going forward at this time. It would seem to be a matter of singular importance for Israel to ascertain what its partners in the talks have at the back of their minds. If it is peace and a genuine acceptance of Israel in the Middle East, matters of detail should be tractable; if, however, claims on Israel are designed to detract from its ability to withstand a future confrontation, the outlook for the talks is less propitious.

For the purpose of this article, I have focused on two elements on which the Israelis hold views which differ from those of the Arab States and some other States participating in the peace talks, one of a general nature, the other pertinent to the nuclear issue.

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On a general level, Israel places all its expectations on the peace talks, for the simple reason that it is trying to address all problems in context so that all parties talk to each other and agreement can be sought between them. Israel is especially wary of initiatives and interventions by international organizations because they tend to lift preferred issues out of context and lead to the passage of resolutions by majority vote, a situation which does not do justice to the issues raised, and puts Israel at an almost automatic disadvantage. In fact, using majority votes on specific issues in the United Nations or its specialized agencies, without regard to the agenda of the peace talks, can be injurious to the talks, and can even cast doubt on the good faith of the participating States.

On the nuclear issue, the Arab States wish this subject to be at the top of the agenda of the Multilateral Talks on Regional Security and Arms Control, and for Israel to place its nuclear installations under full-scope safeguards with the International Atomic Energy Agency (IAEA). Israel, for its part, believes that confidence-building measures of a general nature ought to be at the top of the agenda, and that the nuclear issue should eventually be taken up within the negotiations for a nuclear-weapon-free zone.

The time will be ripe for such negotiations when the peace talks are close to a successful consummation, and a nuclear-weapon-free zone (NWFZ) will be concluded once peace in the Middle East is assured. The Arab States often try to enlist the United Nations and IAEA to pass resolutions designed to put international pressure on Israel. As I have said, Israel views with misgivings the engagement of international organizations on selected matters pertaining to its security, and that can only increase its wariness with respect to the intentions of the Arab States and others participating in the peace talks.

The first part of this article deals with the issue of a NWFZ proper and its general political and security ambience. Subsequently, before discussing verification issues, I shall dwell on perceptions, self-image and hopes because these are more important in assessing a country's character and conduct than its formal adherence to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). It is a drawback that, as compared with the endorsement of formal instruments, perceptions and hopes are more difficult to discern.

Israel and Nuclear Non–Proliferation

In the late 1960s it became known that Israel was engaged in nuclear activities which it refused to submit to international inspection. The most Israeli Governments would say was that Israel would not be the first country to introduce nuclear weapons into the Middle East. Israeli Governments did not elaborate on this statement and have not done so to this day. As I understand it, the purpose of such a statement is to reassure the Israelis in times of gloom, to serve as a possible caution to States which contemplate harming Israel by dint of their preponderance in men and material, and to relieve States which do not wish to take definite positions in this matter from the necessity of doing so. I am aware, of course, of all the speculations on the state of Israeli nuclear developments, but abide by the authoritative statements of successive Israeli Governments. I claim, in fact, that any more detailed knowledge is intrinsically irrelevant to what follows.

It was clear to the Israelis that nuclear proliferation was in itself a bad thing and that they needed to pursue a positive policy in order to remove the danger of a nuclear arms race from the Middle East. Israel refused to go along with repeated international injunctions to sign the NPT or submit to full-scope IAEA inspection. The Arab States urged resolutions on this subject in every conceivable international forum, and those forums went along willingly with these proposals, singling out Israel and disregarding other countries which were presumed to have nuclear capabilities. It was the Israeli understanding that the Arab States wished it to be well-controlled in the nuclear realm, and to maintain the option of waging wars against it, at a time of their choosing, without the risk of having to face nuclear weapons. The Israelis saw further justification for their apprehensions, as time went along, when their concern with the Iraqi nuclear enterprise was brushed aside by the supplier States on the grounds that Iraq was a signatory to the NPT, and when Israel was roundly condemned and punished after it had put the Iraqi reactor out of action in 1981. Had it not been for the invasion of Kuwait and the subsequent widely-based acknowledgement of Iraq's military potential, Israel might still be left alone to contemplate its situation.

In their quest for a positive policy, however, the Israelis were inspired by certain facets of the Treaty of Tlatelolco by which a NWFZ was established in Latin America. They realized that the Treaty of Tlatelolco began as the initiative of the States of the region, had been negotiated by them directly and freely, and included the possibility of mutual inspection. They found virtue not only in the Treaty's goals, but also in its modalities. Their reasoning was simple. The Arab States had made much of Israel's "nuclear threat and capabilities" and had easily ensured massive majorities, at the United Nations and the IAEA, on resolutions censuring Israel, requesting it to put its installations under international safeguards and enjoining all States to cease cooperating with Israel. The Israelis had not threatened a single State, and all references to Israel's nuclear activities were made by others, not by Israel.

The Israelis therefore proposed as a positive policy the establishment of a NWFZ, freely negotiated between the parties and including mutual verification of the agreed safeguards by the parties themselves. The Israelis surmised that if the Arab States really considered Israel's nuclear stance a threat, they would wish to test the earnestness of Israel's invitation. Instead, the Arab States said Israel's proposal was a "gimmick", because Israel could not expect all Arab States to sit down with it and negotiate. Thereupon, the Israelis said they were ready to start discussing the establishment of a NWFZ with any Arab country willing to do so. Not a single Arab State has responded to that invitation, extended some 12 years ago, and repeated annually since. Instead, the Arabs insisted that a NWFZ in the Middle East should come into being through the accession of all States of the region to the NPT or through the acceptance of full-scope safeguards. Resolutions to that effect have been passed by the United Nations year after year. The question of negotiation between the parties is omitted from these resolutions. Israel joins the consensus because it identifies with the goal, but it registers its reservations on the modalities, which the Israelis regard as the acid test of what the Arab States really want. The Arab refusal to negotiate a NWFZ with Israel, and the continued insistence that Israel be internationally controlled in the nuclear realm, convey to Israel two messages: that despite protests to the contrary, Israel is not really perceived as a threat, and that the Arab States wish to retain the option of waging wars against Israel.

Under those circumstances, it seems clear that the Israelis cannot entertain any measure of confidence that Arab support for a NWFZ amounts to more than the removal of a presumed Israeli nuclear capability. In the light of that experience, the Israelis were convinced that the establishment of a NWFZ could not be separated from concurrent attempts to deal with military postures and capabilities of all kinds and the underlying political and emotional causes which fuelled them. In fact, the Israelis entertain so little confidence that, for the time being, the conclusion of a NWFZ based on free negotiation and mutual reassurance can be credible only when war against Israel has been renounced as a way of settling differences in the region. Rather than promoting my own views, let me quote from the "Study on effective and verifiable measures which would facilitate the establishment of a nuclear-weapon-free zone in the Middle East", submitted by the Secretary-General of the United Nations to the General Assembly in 1990.

This is what it says in paragraphs 97 and 98 on the precariousness of Israel's situation.

"Nevertheless, there are indications that Israel's relative conventional strength may be diminishing. In this connection, one factor that should be pointed out is the acquisition by potential opponents of ballistic missiles with a relatively long range and high accuracy. This gives those States a means of striking at a longer distance and enables them to participate in a conflict, even if their territory does not directly abut on the opponent's. As its population is small and becoming smaller in proportion to those of the other nations in the area, Israel has also become more vulnerable to a situation of prolonged warfare leading to a high number of casualties among its civilians or its military."

"Against this background, it is appropriate to point out that Israel's security position is characterized by three features which cannot but play a part in determining its attitude towards the creation of a nuclear–weapon–free zone; the relatively small size of its territory; the sustained hostility between itself and the great majority of States of the region; and the fact that it has no military allies in the region and that the one State that might support it in a conflict is geographically remote."

On the need to deal with all security issues comprehensively, the study says in paragraph 105:

"However, it is most unlikely that Israel will give up the security it believes it now derives from its nuclear ambiguity, its presumed deterrent and its eventual weapon of last resort, without a much higher degree of assurance that such a conflict will not occur, as well as compensation in terms of arrangements to enhance regional security in all of its multiple and complex dimensions, conventional as well as chemical and nuclear, political as well as military."

In the light of the foregoing, it seems to me that the establishment of a NWFZ in the Middle East must follow a peace settlement, proven over time. The next section spells out what I believe to be the natural sequence of events.

The Peace Talks

It is an outstanding achievement of the United States to have convened the parties to the Middle-East conflict and to have engaged them in face-to-face bilateral and multilateral negotiations, and to seek progress in one area wherever it can be made in the hope that it may lead to progress in others.

First, I should like Israel to be accepted as a normal State by the Arab States, after prolonged and futile attempts to dispose of it. Normality means:

—Public recognition and acceptance of any State of the region as an integral part of the region. Israel has throughout affirmed its recognition of the Arab States.

—Public declarations on the part of all States of the region that they will not resort to force in the settlement of their differences. Israel, for its part, is ready to reaffirm its repeated pledges to this effect.

—Public renunciations by all States of the region of attempts to enforce a boycott on any other State or to delegitimize its international standing. Israel, for its part, has never employed such measures and undertakes never to resort to them in the future.

—Accredited representations by all States in Israel and vice versa.

No price should be exacted from Israel for its acceptance as a normal State.

Second, parallel with negotiations for a political settlement, confidence- and security-building measures should be put in place and tested over time. Confidence is built on the basis of time, and there are no short cuts.

Let me quote the Secretary-General of the United Nations on the primacy of creating confidence:

"Confidence must be built on all sides: confidence that declarations of the desire for a just and lasting peace are not merely a smoke screen, confidence that military solutions to political problems are excluded, confidence that military postures that are perceived as threatening can be avoided or adjusted. Renunciation of hostile acts and of threatening, inflammatory declarations would do much to increase confidence as well. Most important of all, there must be progress in solving the fundamental conflicts in the region. Without such progress, technical measures in the nuclear area or on other security problems will hardly be given serious thought, much less will they be developed to provide a meaningful barrier to tension and even war."

Third, there should be regional cooperation on common hazards such as environment and disease, and on critical shortages such as water, which threaten all the States of the region. Such cooperation need not be based on good will, but becomes more urgent for all parties as time progresses

Fourth, attempts need to be made to induce States that have totally rejected Israel and any contact with it to join the peace process. Practical arms control measures require that all confrontational States be committed to a peace process involving not only Israel and the Arab States, but also the Arab States among themselves.

As long as any State is staunchly committed to Israel's destruction, it cannot, in the final analysis, be ignored in any analysis of the arms control and security measures needed in the Middle East. The Gulf States might feel the same way, although for different reasons.

Fifth, once everyone joins the peace process, practical discussions on arms control can yield results.

As an Israeli, I would insist that arms control should concern itself with conventional arms in the first instance and that Israel should attach its signature to a NWFZ only when peace is assured.

Although the peace process is under way and all issues are on the agenda of the bilateral and multilateral talks, I am perturbed, as I said in the beginning, by the Arab insistence on having the nuclear issue lifted out of context and arrogated by the United Nations and IAEA, where the Arab States have majorities, and where majority resolutions take the place of the negotiations envisaged in the multilateral talks. It reinforces my opinion that Israel should not allow this item to be arrogated by international organizations or pushed to the top of confidence-building measures. Such stratagems do not create confidence for Israel.

Sixth, one hopes peace agreements will be concluded. It will become apparent during the transition period if the Palestinians wish to make the arrangements for autonomy a success. If they do, it is my conviction that all options will eventually be open for an enduring settlement. If they chose otherwise, peace may elude them and the Israelis.

Seventh, peace would be followed by a NWFZ covering the States of the Middle East, North Africa and Iran, much in line with the suggestions for the extent of the region contained in the study of the United Nations Secretary-General. There should be no problem with Israel's accession to the NPT after that.

As I contemplate what I believe to be the natural sequence of topics to be taken up in the peace talks, I know it is and will be otherwise. There may be a variety of reasons. The most unpalatable reason would be that the Arab States still did not wish to accept Israel as an integral part of the region, and that it is not peace they really sought. As an Israeli, I feel I need to be wary before I can entertain confidence.

I can conceive of auspicious developments, such as those that occurred in Europe. All the negotiations conducted by the United States and the former Soviet Union over decades did not remove the spectre of a global war. Those negotiations did, however, turn out to have been useful when Mr. Gorbachev came to power and radically changed the priorities of his country. It seemed then that all the weapons that had accumulated had lost their purpose, and all the preparatory work of the past stood the negotiators in good stead. But Mr. Gorbachev's policies could not have been planned or foreseen. They could only be acknowledged in retrospect. It is, of course, possible that a similar discontinuity in ingrained paradigms will occur in our area. But such developments cannot be foreseen and planned, only hoped for. If such radical changes occur, they will put an entirely different colouration on the hitherto slow progress of the peace talks,

Another issue in this context concerns the NPT. As we approach the 1995 NPT Conference which must decide on the length of further extension of the Treaty, it is assumed that pressure will mount once again for Israel to join the NPT, especially since the Arab States will make their support for an indefinite extension of the NPT dependent on Israel's accession.

Under present circumstances, I cannot conceive that Israel can yield to pressure. It continues to be the sole guarantor of its own security. If the Arab States attempt to hold the extension of the Treaty or Israel to ransom, they should not, in my view, be permitted to do so. All they need to do is to make peace with Israel. It is by way of peace that a NWFZ will come about, followed, I believe, by Israel's accession to the NPT.

States are not uniform in their intentions or performance, nor can situations be dealt with uniformly. I feel that should be recognized and acknowledged also with respect to Israel. As long as intentions and performances follow different criteria, different criteria ought to apply to the States which hold and act upon them.

Perceptions, Self-image and Hopes

All three ingredients, perceptions, self-image and hopes, have enduring and transitory aspects. The transitory aspects are the ones conveyed by a perusal of the daily newspaper, and these tend to obscure the more enduring aspects of the perceptions, self-images and hopes, which are the ones that matter.

The image most Israelis have of themselves is based upon the shared goals, common to all democracies, of promoting their own well-being by virtue of their own exertions within the country. They have no national ambitions detrimental to other countries, nor designs upon them. The Israelis wish to live in peace and seek their own sense of distinction through successfully integrating a heterogeneous population, doing good and pioneering work in education, science, industry and agriculture, and through international recognition for the spirit and the quality of such assistance as they can render to countries engaged on their own indigenous development. They wish to be able to travel freely in the region in which they live and visit those landscapes and places with which the history of their people is associated. This is simply a modern version of the Zionist message, and the only one which makes sense. If I am right—and I believe I am—and if the Israelis were allowed to live in peace with their neighbours, all I have said above would turn out to be the sum total of their goals. Indeed, even under adverse circumstances, these goals motivate and sustain them.

Circumstances were adverse. From its inception in 1948, the State of Israel was denied its very existence by all the Arab States in the Middle East and the North-African littoral as far as its Atlantic coast. All wars fought—in 1948, 1956, 1967 and 1973—were about the existence of Israel and not about any specific issue of contention.

With respect to 1956, Israel joined the Suez campaign in order to stop the Egyptians from constantly dispatching Palestinian irregulars from Gaza into Israel, thus throwing life in the country into disarray, where buses to the south had to be protected by armed guards. Israel had no other purpose.

The Lebanese campaign—beyond the establishment of a security zone against rocket attacks—was the only questionable campaign initiated by Israel. It was meant to make Israel's northern border secure and enable a Lebanese government to assume control of Lebanese affairs, particularly of the militias committed to war against Israel. It did not achieve its objective, and the Israeli army withdrew under popular pressure.

The Israelis never engaged in any war with territorial ambitions in mind. In 1967 President Nasser closed the Tiran straits, asked the United Nations troops to leave the Sinai peninsula and put in his own divisions, and promised "streams of blood in Tel Aviv". When the United States, Britain and France would not live up to the guarantees they had given for the status quo in the Middle East, the Israelis were very uncertain about their fate in what became known as the "six-day war" of 1967. They grimly determined to withstand the expected onslaught. They had no other ambition in mind. As it turned out, they found themselves in control of the "occupied territories". They were immediately ready to return most of them in exchange for peace, but were rebuffed by the three "nos" of the Khartoum summit of Arab leaders: no recognition, no negotiation, no peace.

Thus, since 1967, Israel has been in occupation of the territories won in the six-day war and their restive population, and cannot let go as long as those territories could serve as deployment areas for hostile forces, as they have in the past.

There was one signal and significant exception. When President Sadat came to Jerusalem in 1977, said clearly, "No more war", and offered peace in return for the Sinai peninsula, his offer was taken up with alacrity. Indeed, I wonder, and so do many others, what price for peace would be exacted from the Israelis nowadays, had it not been for the inadvertent occupation of Judea, Samaria, and Gaza in the six-day war.

Let me remind the reader that it is not history I am writing but the perception the Israelis have of it. In the mid-1960s, the Palestinian identity began to assert itself vigorously. Until 1967, the Palestinians had been ruled by Jordan and Egypt, and the establishment of a Palestinian State was not on the international agenda. However, after the Israelis found themselves in control of the occupied territories, the establishment of a Palestinian State in the whole of Palestine, as stipulated in the Charter of the P.L.O., became the pivotal issue in the Middle East.

The Israelis were in a deep quandary. It was anathema to them to rule an alien population, yet they could not just withdraw and contemplate one more hostile Arab State along side of them. They appreciated how much the Palestinians wished to be rid of Israeli control, but could not lay themselves bare, faced, as they were, with the unrelenting enmity of all the Arab States and no prospect in sight of genuine peace. The Israelis made efforts to dispel uneasiness by promoting the development of a civilian infrastructure in the territories, the foundation of six universities and the introduction of intensive agriculture, in the hope that those developments would make for eventual cooperation once peace in the area enabled the Israelis to relinquish control. Yet it was fallacious to assume that these initiatives could make for tolerance and patience on the part of the Palestinians, juxtaposed as they were with Israeli suppression of attempts by the Palestinians to rid themselves of Israeli governance.

Until the late 1960s, the Israelis saw themselves—as they were, and are—as a minute island in a hostile sea of Arab States. They had a problem with the world but not with their self-image. Yet once they ruled an alien population and saw no way of relinquishing their control under prevailing circumstances, they were beset by a dilemma which they were unable to resolve on their own.

Until the late 1960s, the Arab States had pursued their designs on Israel unconditionally, just because it was there, and brought to bear the clout of their numbers, their market potential, and the oil wealth of some, in order to enforce an economic boycott of Israel, the severance of diplomatic ties with Israel by many States with no conceivable interest in Middle Eastern affairs, massive and automatic resolutions against Israel at the United Nations and the specialized agencies, not sparing any attempt to ostracize Israel from the international community. However, until the late 1960s, all those attempts lacked moral underpinnings.

After the six-day war, and with Israel in control of the occupied territories, the moral underpinnings presented themselves, and a large part of the international community was relieved to think that there was now justification for the pursuit of Israel by the Arabs, which, until then, they had condoned with some misgivings. The picture of Israel ensconced in its area, suppressing a Palestinian minority because it wanted to rule another ten thousand or so square kilometres, was attractive to much of the international community. The willing support given to countless United

Nations General Assembly resolutions against Israel serves as stark evidence for that statement. The fate of the Palestinians, and the rights denied to them, became the central issue of the Middle East and of peace in the world, judging by the perpetual attention given to them by the Security Council. Arab designs on the existence of Israel were completely ignored.

The frustrations engendered in Israel as a result of being denied peace or the acknowledgement of its precarious situation produced distortions in the thinking of many Israelis. It is the nature of those experiencing frustration to seek ideological outlets. Movements sprang up advocating the retention of the occupied territories, based on the emotional ties of the Jews to the localities in which their history took shape, and Jewish settlements were set up for similar emotional reasons. Those developments may seem offensive to some, and are certainly resented by the Palestinians. As I have said, however, it is frustrations which engender these movements.

Those frustrations were not of Israel's making. As I have mentioned, the moment President Sadat convinced Mr. Begin that he wanted peace and no more war, Sinai was returned to Egypt. That was an affirmation of what the Israelis really want. It is my opinion that they would react in a similar spirit—though not necessarily to a similar extent—if they were offered genuine peace, and all ideological extravagances would fade in consequence, especially those which contrast sharply with the image the Israelis have of themselves and of the sense of achievement they seek.

I have reviewed the way the Israelis perceive the history of their State since its inception, how they see themselves in their Arab environment, and the tenuous reliance they believe they can place on the fairness of the international community.

I have also tried to convey what I am certain is the enduring image the Israelis have of themselves and of the character of their State. Given the chance, transitory interests would yield to the affirmation of their true sense of identity.

Verification of a NWFZ in the Middle East

At the present time, any possible institutional arrangements to ensure effective verification of a NWFZ in the Middle East would have to reflect the suspicions which exist between a number of the regional States and Israel. However, if and when the peace talks succeed, and peace descends upon the area, institutional arrangements will reflect an entirely different climate and be dictated mainly by good order and economic management, as is the case in all existing nuclear-weapon-free zones.

Let me, therefore, reflect on the conditions which obtain in our area, and those necessary, in my view, for the establishment of a credible NWFZ and the institutional framework which can support it.

For a fitting description of the Middle Eastern situation, let me quote from the study of the United Nations Secretary-General on "effective and verifiable measures which would facilitate the establishment of a nuclear-weapon-free zone in the Middle East" submitted to the General Assembly as document A/45/435 on 10 October 1990.

This document which was applauded as the most profound attempt yet to understand the situation and to come forward with cautious suggestions on how to deal with so intricate an issue, is as valid today as it was in 1990. This is what the report has to say on the situation in the region which it defines as stretching from the west coast of Africa and east to Iran:

"For the Arab Governments and the Islamic Republic of Iran, the problem is simple: the difficulty lies in Israeli policies, and the proper step for Israel to take is to join the NPT and negotiate with IAEA the application of safeguards on its nuclear installations or, short of joining the NPT, to accept full–scope safeguards on all of its installations." (Para. 86)

"For Israel the problem is equally simple: the difficulty lies in the unwillingness of other States in the region, except Egypt, to accept Israel as a legitimate State, and the proper step for them to take would be to sit down at a formal negotiating table with Israel and work out the arrangements for creating the zone." (Para. 87)

"Given the present intense mistrust that exists between Israel and most Governments in the area, it is difficult to imagine either (a) an Israeli Government making an immediate, full disclosure of weapon–related material or (b) a general acceptance of the completeness of whatever declaration Israel might make. Clearly, an extended transition with novel and complex arrangements will be required to move from an initial acceptance by Israel of safeguards on its known facilities to an eventual acceptance by other States that Israel is truly nuclear–weapon free." (Para. 89)

"Turning to the Israeli pre-condition of a formal multilateral negotiation for the establishment of a zone, the situation also does not seem quite so simple. Arab willingness to sit at the table with the Government of Israel would signal an extremely important moderation in past attitudes and thus would reflect a diminution in Israel's security problem. It seems extremely doubtful, however, that in itself this improvement would appear to the Government of Israel and public opinion to be sufficiently profound and irreversible to justify a profound and irreversible alteration in Israel's defence posture. Rather one would have to expect that the negotiation of a nuclear-weapon-free zone would become related to other measures to reduce the danger of hostilities and to strengthen Israeli confidence that a true and lasting peace was being built." (Para. 90)

"Creating a nuclear-weapon-free zone in the Middle East is thus not simply a matter of finding some clever diplomatic formula that overcomes or circumvents the deadlock in the official Israeli and Arab positions. Only a series of steps that reduce tensions drastically can bring the parties to a serious negotiation. And even then it would not be expected that the negotiations would be quick and easy or that the zone, when agreed, could be fully realized without an extended transition. The complexity and drawn-out character of this process should not, however, discourage supporters of the concept. Each step of this process will be worth while in itself, reducing the risk of another war. And the structure, when completed, because of the multiple benefits it will have generated along the way and the many concessions that all parties will have made to secure these benefits, will be far more solid and durable than any quick and easy treaty would ever be." (Para. 91)

"This discussion of the official positions and the realities that lie behind them has proceeded as if the problem had only two sides: Arab and Israeli. Again the reality is far more complex. As illustration one need only cite the Iran-Iraq relationship." (Para. 92)

Since the submission of this report, the Gulf War has brought starkly into relief the fact that the problems of peace and war pertain not only to Israel and the Arab States, but also to the relations of the States of the region among themselves, irrespective of Israel.

Having thus considered the Middle Eastern setting, as described by the Secretary-General, let me now turn to my views on the subject of institutional arrangements.

Institutional arrangements reflect and express implicit understandings. They are organizational and technical devices, but cannot stand on their own. A treaty concluding a NWFZ testifies to the desire of the contracting parties to reassure each other that no nuclear weapons can even be contemplated in the event of any conflict between them.

Institutional arrangements for verification procedures in a NWFZ are not designed to question the sincerity of the signatories at the time they enter that commitment, but rather to prevent any second or third thoughts on the part of the signatories as the years go by and political circumstances shift, at least slightly.

In the NPT, States enter a commitment *vis-à-vis* the international community. That commitment is monitored by the IAEA—an international agency. This is a good thing, but its effectiveness is circumscribed by two circumstances. First, no single State can be a serious threat to most of the international community. Second, IAEA has to respect the sovereignty of nations and the general political setting.

A NWFZ, on the other hand, is brought into being by neighbouring States, and it is generally with one's neighbours that one has problems and from whom a threat can emanate. In that sense, a NWFZ responds to an acute need felt by its participants rather than to a general concern felt by the international community. Institutional arrangements and verification procedures in a NWFZ, therefore, need to be more responsive in the collection of data and in assessments and reactions, than is the case for the NPT and the relevant functions of IAEA.

Let us test the validity of these statements in those areas where we have nuclear-weapon-free zones by examining the conditions which enabled the participating States to take and consummate their initiative, and codify it by treaty and institutional arrangements. I refer specifically to the Treaty of Tlatelolco for Latin America, the Treaty of Rarotonga for the South Pacific, and I also include Euratom, because the participating States have denied themselves the option to develop and produce nuclear weapons. It is common to these three areas that they

—Entertain normal relations among themselves; and

—Have a tradition of regional cooperation—anticipating by decades the establishment of their respective NWFZs—and the explicit organs charged with promoting such cooperation. I think of the Organization of American States and the Inter-American Development Bank, in the case of Latin America; of the South Pacific Forum and the South Pacific Bureau of Economic Cooperation, in the case of the South Pacific NWFZ; and of the Common Market, in the case of Europe.

—In those three regions there are no countries which contemplate the settlement of differences by war of any kind.

—The Treaty of Tlatelolco goes back to 1967, and the Treaty of Rarotonga to 1985, and no complaint has been registered by one country against another with regard to any suspected violation of their undertakings. That is also true of Euratom.

I read into these four observations that a NWFZ is ripe for a commitment by the participating States once they do not envisage ever going to war with one another over any contentious issue.

The importance of such a prior stance and deeply-felt attitude emerges from an examination of some instances in which NWFZs have been proposed time and again, and yet continue to elude agreement. A NWFZ for South Asia, including principally India and Pakistan, is not on for the time being. However unlikely any military conflict may be, there is no clear sense that armed conflict has been definitely ruled out. Pakistan enjoys the political support of China—itself a nuclear Power—and has friends among other Muslim States.

Much as Pakistan desires a NWFZ, India cannot help being apprehensive of China, which has full nuclear freedom.

With respect to the two Koreas, again the possibility of armed conflict is not ruled out, and that stands in the way of an agreement to make the peninsula a bona fide NWFZ.

With respect to the Middle East, the United Nations Secretary-General suggested in his study (paras. 63–72), that it should include "the area extending from the Libyan Arab Jamahiriya in the West, to the Islamic Republic of Iran in the East, and from Syria in the North to Yemen in the South", plus Sudan and the States of the Maghreb (Tunisia. Algeria and Morocco). It even mentions Afghanistan and Pakistan.

That area, admittedly, is fraught with problems which bear on the establishment of a NWFZ and certainly on the institutional arrangements which would serve as firm reassurance to the States of the zone that wars in the future were ruled out, and with them the temptation to develop a nuclear potential.

We need to look at the situation soberly. We have just emerged from the Gulf War, which set a number of States in the Middle East against each other, and the Gulf War followed in the wake of the eight-year war between Iran and Iraq.

No country in the zone is at peace with Israel. Some are formally in a proclaimed state of war with it, some even refuse to participate in the peace talks on which hope is now riveted after a succession of wars since the establishment of Israel in 1948. In addition, matters are not easy among other States in the region.

In the nuclear realm, Israel has not acceded to the NPT and is widely believed to have a nuclear option. Iraq has been shown to have broken faith with its undertakings as a signatory to the NPT, and rumour has it that Iran aspires to a nuclear capability out of keeping with its NPT commitments.

In 1974, Egypt and Iran co-sponsored a resolution calling for the establishment of a nuclear-weapon-free zone in the Middle East, and resolutions in this sense have been passed by the General Assembly ever since. Matters did not move forward since the sponsors of those resolutions demanded that Israel put its installations under IAEA full-scope safeguards and stated that by this very act a NWFZ would come into being. Israel maintained that a NWFZ would need to be negotiated between the parties themselves, as stipulated by the United Nations in 1976, when Israel invited any Arab State so willing to come forward and begin negotiations to do so. Israel has not submitted its installations to full-scope safeguards, and no Arab State has come forward to sit down with Israel and begin negotiating a NWFZ.

Even as the peace talks are making cautious headway, and the parties are talking to one another, the Arab States wish the nuclear issue to be put at the top of the agenda, while Israel maintains that the item can only be taken up once it is assured that the settlement of differences by peaceful means is accepted by all parties. Israel's attitude conforms to para. 151 of the Secretary General's study of 1990, which says:

"The close relationship—the linkage—among all the elements that affect security is well known. Nuclear capabilities are linked to chemical weapons, chemical weapons to conventional arms, conventional arms to political conflict. And all these threads are woven into a seamless fabric of fear and insecurity. If the area is to become and remain truly nuclear-free, then this fabric must be cut into pieces and dealt with piece by piece. The problem is much too complex and unyielding for any comprehensive settlement to solve all at once. Yet all the separate elements must be worked on concurrently, for it will not be possible to settle any one piece of the problem unless it is clear that progress is being made on the other pieces as well. A radical transformation, step by step, must be effected in the military and political relationships of the entire area. The peoples of the Middle East must develop confidence that the political conflicts that surely will long remain are going to be settled—and settled equitably—without resort to force or the threat of force."

It is manifest that the prerequisites for a credible NWFZ in the Middle East, i.e., normal relations between all States, a tradition of cooperation and the definite renunciation of war as a means of settling conflicts, are absent. The peace talks have, for the first time, set the stage on which the possibilities of peace can be explored dispassionately.

These reflections have a direct bearing on the institutional verification arrangements which can be contemplated. If institutional arrangements for verification in a NWFZ were to be discussed in the present climate of suspicion and contrariness, and, moreover, discussed in isolation from any other context, it would be nearly impossible to agree on them.

Judging by precedents, institutional arrangements would include the following:

—A treaty establishing the NWFZ.

—A General Conference, composed of all participating States, as the supreme authority in managing the zone.

—A governing body, composed of a number of States, for the effective implementation of resolutions of the General Conference.

—A permanent secretariat.

—A special body charged with verifying that commitments are adhered to, with inspection procedures and inspectors that firmly reassure all the States of the zone that they have nothing to worry about. Mutual inspection by the States would, presumably, be the most reliable means in that sense.

Moreover, provisions would have to be made for routine, special and challenge inspections and effective means of dealing with complaints and suspicions, in elucidation and in subsequent action.

Under existing circumstances, one cannot even envisage agreed voting procedures for the General Conference or agreed compositions and rotations for the various executive organs. Requests for challenge inspections would abound and put the entire fabric at risk.

On the other hand, if and when the Middle East arrives at a pattern of relations such as those which obtain in Latin America, in the South Pacific and in Western Europe, many of the seemingly insurmountable obstacles which beset the Middle East at present will cease to be relevant. Institutional arrangements will then be a matter of good order and effectiveness, but not an antidote to war, which they can never be.

I hope I have illustrated how heavily dependent institutional arrangements are on the political setting.

It is interesting in that context to look more closely at some of the provisions of the Treaties of Tlatelolco and Rarotonga. They reflect either an absence of concern about the intentions of the signatories with respect to one another, or else, if ever put to a test, cannot really be implemented. They have, indeed, never been put to a test.

If you look at the Treaty of Tlatelolco, you will find that the regional body charged with verification, OPANAL, is mainly political and relies on IAEA inspection for technical verification, i.e., the States of the region are not really worried about one another. Further, the Treaty stipulates uncommonly intrusive inspection procedures, and, when called for, the dissemination of reports even to members of the General Assembly of the United Nations. That patently contradicts the confidentiality of reports which can give away technical details of economic value. Again, given the agreeable climate and the fact that no single complaint has ever been lodged by one country against another, the impractical contingency of intrusive inspections and of disseminating reports has never arisen, and the States live comfortably with the provisions regarding developments that are unlikely to arise.

The Treaty of Rarotonga similarly reflects the conviction that its complaint procedure need never be invoked. Indeed, no recourse to the Security Council is even contemplated. The member States also do not seem to be perturbed by Australia's insistence that national laws govern the admissibility of challenge on-site inspections, surely a condition which would prevent verification when it was most needed. Even under those relatively propitious circumstances, we should remember that the Treaty of Tlatelolco, signed in 1967, became meaningful only in 1993, with the presumed accession of Argentina and Brazil in the near future—26 years after the Treaty came into being.

Reverting to the proposals for a NWFZ in the Middle East, there are a number of conclusions with respect to institutional verification arrangements that I wish to specify:

—They depend on the political climate. At present, no viable arrangement can be conceived on which the prospective parties can agree. If the peace talks proceed satisfactorily and lead to peace, agreed institutional arrangements will become feasible.

—Inspection procedures would need to be intrusive and conducted in a manner which would be completely reassuring to the States of the region. This means that the States would inspect each other mainly with inspectors chosen by them. Upon invitation by the States of the region, the IAEA would be consulted on verification procedures in the first instance, and would ascertain that the provisions made and their implementation serve the purpose intended. Presumably, mutual inspection would be more intrusive than verification conducted by IAEA.

—The document GC(XXXVI)/1O19 of 16 September 1992 entitled "Application of IAEA safeguards in the Middle East", ably discusses, in paragraphs 18–24, the various options for institutional arrangements. Those will be helpful to the parties to the peace talks once peaceful conditions in the Middle East are assured. In the interim, I do not think the IAEA can be of further help in designing feasible institutional arrangements for a NWFZ until the Middle East settles into a more peaceful climate. That should be our hope.

Non-Proliferation and Issues of
Regional and Global Security

A Nuclear-Weapon-Free Zone in Africa

Ibrahima Sy

Implementation of the Declaration on the Denuclearization of Africa is an objective which is extremely important to the Organization of African Unity. The efforts of the African countries to establish a nuclear-weapon-free zone on the continent have now been pursued for more than thirty years. They began at the time of the French nuclear tests in the Sahara, which involved risks of contamination, proliferation of nuclear weapons and involvement of Africa in the East–West confrontation.

Those concerns were behind the African initiative that led the General Assembly to adopt, on 24 November 1961, resolution 1652 (XVI), in which the Assembly stated that it considered Africa a denuclearized zone. Although that resolution predated the establishment of the OAU, it set the tone for what were to become the main African concerns in the field of disarmament.

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The resolution refers to five main concerns:

—The arms race;

—The possible spread of nuclear weapons;

—The resumption of nuclear tests in the continent of Africa;

—The need to prevent Africa from becoming involved in any competition associated with nuclear weapons; and

—The importance for Africa of concentrating on problems related to its development.

The General Assembly supported those concerns, calling upon Member States:

a To refrain from carrying out or continuing to carry out in Africa nuclear tests in any form;

b To refrain from using the territory, territorial waters or air space of Africa for testing, storing or transporting nuclear weapons;

c To consider and respect the continent of Africa as a denuclearized zone.

That resolution provides a very clear statement of Africa's objectives, which from the beginning have been the following:

—To eliminate nuclear weapons from the continent;

—To keep Africa out of the sphere of rivalries; and

—To establish a nuclear-weapon–free zone.

In the resolution on general disarmament adopted at the conference establishing the Organization of African Unity, the African Heads of State and Government forcefully repeated the same concerns as those expressed in General Assembly resolution 1652 (XVI), developing them further and placing them at the centre of efforts towards general and complete disarmament.

In the resolution, the African Heads of State and Government confirmed their determination to make Africa a nuclear-weapon-free zone, their decision not to manufacture nuclear weapons and their desire to promote the peaceful uses of nuclear energy.

The following action is required to guarantee these commitments by Africa:

—The destruction of existing nuclear weapons;

—The elimination of foreign military bases;

—The ending of the arms race; and

—The signing of a general and complete disarmament agreement under strict and effective international control.

That resolution provided the basis for the African position on the establishment of a nuclear-weapon–free zone on the continent. The other resolutions subsequently adopted by OAU on the question aimed at establishing the means for implementing the resolution.

Thus, OAU resolution CM/Res.3(I) of 10 August 1963 invited the representatives of the African countries at the United Nations to combine their efforts to achieve the objectives of the Addis Ababa resolution declaring Africa a denuclearized zone.

It also suggested to member States of the OAU that they should sign or accede to the partial test-ban Treaty.

Reaching a new stage in their efforts to make their goal a reality, the Heads of State and Government of the OAU, at the Organization's first session in 1964, declared their readiness to undertake, through an international agreement to be concluded under United Nations auspices, not to manufacture or acquire control of nuclear weapons.

They also invited the General Assembly to approve the Declaration and take the necessary measures to convene an international conference with a view to concluding an international treaty.

The General Assembly approved the Declaration, but no practical steps were taken to make it a binding legal instrument.

The situation remained unchanged for approximately 10 years, during which time the nuclear Powers were careful not to give the impression that they were openly violating the General Assembly's recommendation that Africa should be considered as a denuclearized zone.

In a period of intense rivalry such as the cold war, those Powers were not at all prepared to remove the advantages and resources of Africa from their strategic considerations. A nuclear demilitarization of Africa had consequences which those Powers with bases on the continent were not prepared to accept.

It should also be added that, until the middle of the 1970s, the entire southern half of the African continent was under the domination of colonial and racist minority regimes. Thus, all of the political conditions for the conclusion of a legally binding instrument were not met.

The international consensus realized in 1978 on the definition of and modalities for the creation and operation of a nuclear-weapon-free zone revived interest in the establishment of such a zone in Africa. However, from the middle of the 1970s until the beginning of the 1980s, the goal of African efforts in that regard was not the conclusion of a treaty, but rather the adoption of measures to prevent the goal of a nuclear–weapon–free zone from being irrevocably undermined by the growing nuclear capability of South Africa and its cooperation with certain non-African States.

The Government of South Africa, which at the time was not a party to the NPT, was pursuing a policy of racial oppression directed towards the majority of its population and a policy of aggression and destabilization in regard to neighbouring countries.

Moreover, its nuclear programme was developing in the utmost secrecy, and the countries of Africa had reason to fear that South African nuclear cooperation with others would provide it with the means to manufacture nuclear weapons.

The discovery of an atomic test site in the Kalahari Desert by a Soviet satellite was confirmed by the United States in 1977. Furthermore, the explosion that was detected in the South Atlantic by the Vela satellite in 1979 added to the suspicions of many that South Africa had progressed to the point of being able to manufacture nuclear weapons.

The report of the United Nations Group of Experts charged with studying South Africa's nuclear capacity concluded that "there is no doubt that South Africa has the technical capability to make nuclear weapons and the necessary means of delivery".

Despite those facts and many other indications, there would be no consensus in the General Assembly on measures to be taken to stop South Africa's attempt to introduce nuclear weapons on the African continent. Many countries, because of their economic, cultural or other ties with the Pretoria Government, were not prepared to exert the necessary pressure on the regime to dissuade it from undermining the African consensus on the non-proliferation of nuclear weapons.

When President De Klerk announced on 24 March 1993 that South Africa had secretly manufactured six nuclear fission devices, he was only confirming something about which Africans and many members of the international community had not, for a long time, entertained the slightest doubt, concluding that nuclear fission devices were actually weapons.

The nuclear Powers, which profess to be guarantors of the current non-proliferation regime, could have done more to shed as much light as possible on that question when the first suspicions about South Africa began to be felt. Such a move would have been an important confidence-building measure for the non-nuclear-weapon States.

Today, international political changes, such as the progress achieved in the struggle against apartheid, the end of the cold war and the efforts of the OAU to promote the settlement of conflicts in Africa, have revived efforts to make the continent a nuclear-weapon-free zone.

In South Africa, the liberalization of political life is accelerating the process of dismantling apartheid. Thus in July 1991, South Africa acceded to the NPT and signed a safeguards agreement with IAEA. President De Klerk announced in March 1993 that the six nuclear devices which his country had secretly manufactured had been destroyed. However, many questions remain to be answered regarding the disposition of the fissionable material and the other bomb components. The international cooperation from which South Africa benefited in building up a nuclear arsenal for itself remains a mystery. It is therefore important that light should be shed on these questions, since the South African Government has stated that it wishes to join in the efforts under way to establish a nuclear-weapon-free zone in Africa.

The second factor conducive to the establishment of a nuclear-weapon-free zone has been the end of the cold war. The strategic considerations which traditionally have prevented certain nuclear Powers from supporting the creation of a nuclear-weapon-free zone will now have less weight.

The third factor in this revival of efforts to denuclearize Africa is the commitment of the Organization of African Unity, since the 1990 Declaration on the Political and Socio–economic Situation in Africa, to create a secure environment conducive to economic development. In order to promote economic recovery and development and the economic integration of Africa, the OAU has taken new initiatives to tackle conflicts in Africa. It has put in place a mechanism for the prevention, management and settlement of conflicts. That mechanism fits in with the other actions OAU is taking to promote the management of change and the participatory democratization of its efforts to establish conditions of peace and political stability conducive to economic development. The creation of a nuclear-weapon-free zone would help strengthen those efforts by removing the risk of nuclear-weapon proliferation and the use of such weapons against African States, and ultimately by encouraging the use of nuclear energy for peaceful purposes. The nuclear-weapon-free zone should therefore promote the peaceful use of nuclear energy in areas such as agriculture and medicine.

The three facilitating conditions mentioned above also define the purpose behind the establishment in 1991 of a United Nations–OAU Group of Experts whose main task was to draw up a draft treaty or convention on the denuclearization of Africa. The Group of Experts has already held three meetings and has made considerable progress in its task of drawing up a draft treaty on the establishment of a nuclear–weapon–free zone in Africa.

The draft treaty is being drawn up in compliance with the resolutions of the Heads of State and Government of OAU and of the United Nations General Assembly, with the aim of banning nuclear weapons and promoting peaceful uses of nuclear energy. The treaty's obligations to ensure the prohibition and effective elimination of nuclear weapons will cover the following areas: development of nuclear weapons, production, stockpiling, acquisition, transfer, utilization, testing, destruction in the case of countries such as South Africa that have had nuclear devices, transit and disposal of nuclear wastes.

The last item was included in response to the increasing concern expressed by the OAU following attempts to use Africa as a dumping ground for toxic wastes. The future treaty should therefore examine both aspects of the question, namely, the dumping of nuclear wastes at sea and the dumping of radioactive wastes in the territory of States parties.

The peaceful use of nuclear energy, which is a key element of the proposed treaty, deserves the utmost attention. The treaty should address, *inter alia,* the following questions:

—Recognition of the importance of African countries mastering nuclear technology for the purpose of economic and social development;

—The need for African countries to establish and strengthen regional and subregional cooperation in the above-mentioned field; and

—The right of African States to seek and obtain appropriate assistance and cooperation from the developed countries and from IAEA.

While the peaceful use of nuclear energy is still only in its infancy in most of the African continent, it is none the less certain that with economic and technological progress, a growing number of States will wish to take advantage of the many benefits of nuclear energy.

In order to ensure full compliance with the obligations agreed on, the treaty must provide for an effective system of verification. In that regard, it would be up to the parties to adopt the system which they considered the safest and the most capable of maintaining the nuclear-weapon-free status of Africa.

It will be necessary, however, for the States parties to conclude a full safeguards agreement with IAEA. The system of verification should be adapted to the realities of the nuclear-weapon-free zone and should incorporate the norms established at the continental, regional and subregional levels.

With respect to the geographic limits of the zone, the experts are of the view that they should cover the entire continent of Africa, including the adjacent islands, in accordance with resolution CM/Res.661 (XXX10) of the Organization of African Unity.

On this question, the experts have expressed the view that, in order to be effective, the nuclear-weapon-free zone should include the territory of South Africa, a country which has acknowledged that it has developed a nuclear capability.

Territories under the trusteeship of non-African Powers are limited to a few islands around Africa. The OAU hopes that those Powers will take an attitude similar to that which they have adopted with respect to the Treaty of Tlatelolco.

The viability of a nuclear-weapon-free zone depends to a large extent on the political support of the nuclear Powers and especially on their willingness to offer credible security guarantees, both negative and positive. In fact, the process of establishing nuclear-weapon-free zones in the world has been hampered considerably by the reluctance of the nuclear Powers to offer such guarantees to those States which have renounced nuclear weapons in a juridically binding way.

Today, with the threat of a nuclear holocaust substantially diminished and the East-West conflict no longer dominating international relations, the reaction to nuclear-weapon-free zones should be less problematic. It would be useful to recall here that paragraph 61 of the Final Document of the Tenth Special Session of the General Assembly provides that "the process of establishing such zones in different parts of the world should be encouraged with the ultimate objective of achieving a world entirely free of nuclear weapons".

In paragraph 62 of the same document, the General Assembly states that with regard to such zones, the nuclear

Powers are asked in turn to give undertakings the modalities of which would be negotiated with the competent authority of each one, particularly:

a To respect strictly the status of the nuclear-weapon-free zone; and

b To refrain from the use or threat of use of nuclear weapons against the States of the zone.

On the strength of that international consensus, the Group of Experts, in examining the question of the obligations of nuclear-weapon States with regard to the proposed nuclear-weapon-free zone, concluded that it was crucial to furnish adequate safeguard guarantees of non-use of nuclear weapons against an African State within the zone and that they should take all appropriate measures to prevent any potential threat of the use of nuclear weapons against a State in the zone.

The importance of the political support of the nuclear Powers for the plan to establish a nuclear-weapon-free zone in Africa cannot be over-emphasized. The two earlier attempts to create nuclear-weapon–free zones, in Latin America in the Treaty of Tlatelolco and in the South Pacific in the Treaty of Rarotonga, are not reassuring precedents in terms of the attitudes of the nuclear Powers. The question remains as to whether their national strategic considerations will continue to override the urgent need to stop the proliferation of nuclear weapons. The experts recommended in that connection a process of political consultations for the purpose of removing any obstacle to support by the nuclear Powers for the most important African disarmament initiative of the past twenty years.

The first report of the Group of Experts, which endeavoured, in particular, to assess the prospects of a new African disarmament initiative, was encouragingly well-received by the Council of Ministers of OAU.

The OAU should make it known that changes in the international scene now may favour the implementation of the Declaration on the Denuclearization of Africa of 1964 and the relevant provisions of the Lomé Declaration on security, disarmament and development of OAU of 1985.

The Security Council, which receives regular reports from the Secretary-General on this question, is following it with interest. The next session of the Group of Experts should be decisive, especially with regard to the finalization of the draft treaty.

The working climate, the participation of experts from various regions of the continent, and of countries with sophisticated nuclear capabilities, the support of the United Nations Secretariat, and the participation of experts from IAEA and from the Treaty of Rarotonga have been important factors in the advances made to date.

The OAU hopes that the international community and the United Nations will continue to lend their support to two further meetings of the group so that it can finalize the treaty.

Non-Proliferation and Issues of Regional and Global Security

Nuclear Non-Proliferation and the International Inspection Experience in Iraq

Benoit Morel

Introduction

Iraq is the first non-nuclear weapon State party to the Treaty on the Non-Proliferation of Nuclear Weapons found to have had an active nuclear-weapons production programme. The Persian Gulf War led to the first instance in which the international community responded vigorously to an infraction of the NPT. The response took the form of United Nations Security Council resolution 687 of April 1991, which charged a United Nations Special Commission (UNSCOM), in cooperation with IAEA, with the task of investigating and destroying Iraq's programmes of weapons of mass destruction and their delivery system. That was accompanied by severe sanctions some of which are linked directly to the requirement of implementing the disarmament provisions of the ceasefire. Once disarmament is achieved, long-term intrusive monitoring is to be conducted to ensure that previous activities in any of those areas will not recommence. This firm treatment of

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Iraq was made possible because it was part of a cease-fire agreement.

The UNSCOM/IAEA investigation would have created a useful precedent for the future of nuclear proliferation if it had been undertaken in response to a violation of the Treaty instead of as part of a cease-fire agreement following a military defeat. Whether it will, in fact, be used as a precedent in the future, or viewed as a one-time event, the investigation is interesting for several reasons.

The successful enforcement of a future international nuclear-control regime depends on the degree of transparency that can be achieved in the nuclear world. The UNSCOM/IAEA investigation provides a unique reference point for determining how well and easily international inspectors, when granted unlimited access, can penetrate a closed society and uncover the total scope of a secret nuclear programme.

Discussions on the transfer of technology to countries which are technologically less advanced inspire a variety of clichés concerning their ability to absorb or develop the latest technologies. The UNSCOM/IAEA investigation provides a wealth of information on how nuclear-weapon programmes proceed in countries which do not have a solid technological base. It is useful to remember that the Manhattan Project, 50 years ago, delivered several nuclear devices in little more than two years. Iraq is technologically behind the United States, but not by 50 years. Iraq's pursuit of nuclear weapons can be traced back at least to the mid 1970s, when it purchased the Osiraq reactor from France. That was more than 15 years ago, and Iraq was still years away from possessing nuclear weapons in 1991. The IAEA estimates that it has unearthed at least $15 billion worth of hardware. This does not include the civil engineering costs. The number of Iraqi personnel associated with Iraq's nuclear weapon programme is estimated at 20,000. How does one explain the fact that so many people, in a far longer time, with more resources, in a fairly advanced technological environment, and with the benefit of hindsight (since most of the findings of the Manhattan Project are public), delivered so little? One reason is that the programme was secret. Furthermore, Iraq had to purchase everything at a very high price.

One of the IAEA findings is that the heads of Iraq's nuclear-weapon programme (code-named PetroChemical-3 or PC-3) were capable scientists educated in the best institutions in the West. But the engineers lacked technical depth. They were poor at finding creative solutions to the myriad snags that every large-scale engineering project has to overcome. A few individuals were carrying the whole programme. In other words, the cultural, technological and scientific profile of the country constituted another important factor.

The relation between Iraq's quest for nuclear weapons and the IAEA safeguards system may point to the most urgent problem. The fact that while Iraq was actively developing a nuclear-weapon capability, it was receiving "clean bills of health" from IAEA, clearly indicates a major failure of the non-proliferation regime defined by the NPT. While it would be simplistic to conclude that IAEA has shown its limits as an instrument of enforcement of the NPT, the Iraqi episode points to fundamental problems with the present nuclear-non-proliferation control system.

One of the most important lessons of Iraq is that the approach to NPT verification based on a close monitoring of nuclear materials has flaws. But finding an alternative approach is not easy. That may be the single biggest challenge of the new era of nuclear-proliferation prevention into which the Iraqi episode has ushered the world.

THE UNSCOM/IAEA nuclear investigation

By November 1993, 22 inspections of Iraq's nuclear activities had been conducted by IAEA safeguards inspectors, supplemented by nuclear weapon experts from different countries, including the United States. Although it has been suggested that IAEA was so accustomed to doing *pro forma* investigations that it was basically against its rules to be "pushy", its investigations generated an enormous amount of information. At the outset, the head of the first team explained in great detail to the 34 inspectors from 20 Members States how that inspection differed fundamentally from a safeguard inspection. Instead of taking place within the legal framework of INFCIRC/153 of 1972, which limits the access of inspectors to declared areas, that investigation was conducted under the conditions of United Nations resolution 687, which granted full access to the inspectors.

Iraq did not volunteer any significant information. It merely acknowledged the truth after it was discovered. It had to revise several times its "full, final, complete" report, because important information known to the Special Commission and IAEA was missing. In some cases, Iraqi personnel tried physically to obstruct the investigations. Bullets were fired above the heads of the inspectors when they were attempting to inspect a facility, and papers seized by the inspectors in the PC-3 Headquarters were forcibly taken from the inspectors; some, but not all, of the papers were given back to them. It would be interesting to know what was in the papers that Iraq chose to conceal from the inspectors. A partial and not very satisfactory explanation is that Iraq tried to protect its sources and suppliers to the maximum extent possible. In that effort Iraq received some help from the governments of the countries of those suppliers.

An investigation like the one conducted by IAEA raises difficulties for both parties, particularly initially. Most of the facilities inspected are very sensitive. It is understandable that guards at the gates of facilities of that degree of sensitivity were not prepared to open them immediately, without referring to their superiors, when international inspectors showed up without warning. In no country should one expect that guards would be empowered to let anybody in without approval from higher authorities. However Iraq has an obligation to inform such guards and, indeed, all its officials, of their absolute obligation to facilitate inspections without delay. Thus, later in the investigation process there could be no excuse for delays on these grounds.

It is also true that one of the most revealing papers, namely, the secret report on the weaponization activities at Al Atheer, which established the existence of the nuclear programme PC-3, was found in a surprise inspection and as a result of a confrontation. Among other things, that report suggests that as of mid-1990 (i.e., just before the invasion of Kuwait and therefore not long before the programme was abruptly interrupted), the weapons programme was still at an early stage.

Also noteworthy is the observation that after the sixth of the first 22 inspections, i.e., after October 1991, no significant finding was made (with the possible exception of hundreds of tons of maraging steel which was found in January 1992). The other inspections largely confirmed previous findings, witnessed the destruction of hardware and established the foundations of the future long-term monitoring system. Considering the demands that will be put on the long-term monitoring of Iraq's nuclear and other relevant activities, the work that IAEA has done to date can be taken only as a modest beginning. Serious work has still to be done on the design and establishment of an affordable monitoring system that will be intrusive enough to address all the concerns of the international community.

The discovery of the ElectroMagnetic Isotopic Separation (EMIS) programme was the first major finding and also the first major surprise of the investigation, as no national intelligence system seems to have indicated its existence. The IAEA inspectors were so unprepared for it that it took the memory of some old-timers familiar with the calutron programme of the 1940s to divine the purpose of the big magnets and the extravagant electricity supply (up to 100 megawatts) found in some buildings.

Most of the research and development of the EMIS programme took place in the main Iraqi nuclear centre at Al Tuwaitha at a time when it was regularly inspected by IAEA. Under their statute, the IAEA inspectors were confined to the declared safeguarded areas: the ruins of the French reactor Osiraq (and its smaller companion Isis) and the Soviet IRT 5000. The Soviet IRT 5000 was also using safeguarded, enriched uranium (36 per cent and 80 per cent enrichment). None of the feed fuel provided by the French (about 12 kg of weapon-grade 97 per cent uranium, "pre-irradiated") or that provided by the Soviet Union had been diverted.

The only violation of the safeguards that the UNSCOM/IAEA investigation discovered is the fact that rods of natural uranium were exposed for about 50 to 60 days to the flux of neutrons generated in the IRT 5000 to produce plutonium. That activity recovered only 2.7 grammes of plutonium.

IAEA inspected the facility at Tarmiya which was destroyed during the war, when it was six to 18 months away from completion. It was then slated to produce highly enriched uranium (HEU) through EMIS. A similar EMIS facility was found at Ash Sharqat, although it is possible that whatever plans there had been for its use had been phased out. The total production capacity of Iraq's EMIS system was estimated by IAEA at 15kg per year when fully operational.

But Iraq seems to have encountered problems in finding adequate ion sources to produce that much HEU. In order to be able to produce significant kilograms of HEU per year, it is necessary to have ion sources yielding around $10^{16.7}$ ions per second. That kind of ion source is notoriously difficult to develop.

The feed for EMIS, UCl_4, was to be manufactured in Al Jesira, in the North of Iraq. Al Jesira was apparently planned as the "chemical processing" facility where the feed for EMIS and the feed for the centrifuge programme (UF_6) were to be manufactured.

It is interesting to note that although UF_6, the feed for a centrifuge, is not particularly difficult to manufacture, Iraq had very small quantities of it, as if it expected to have no use for it in the near future. Still, the UNSCOM/IAEA investigation revealed that Iraq had an active interest in the centrifuge approach to enrichment. That interest materialized in the building of the Al Furat facility to manufacture by the centrifuge process. IAEA estimates that, operating at full capacity, Iraq would have been able to produce 25 kg of HEU per year through the centrifuge programme. But that was still years away. The Iraqi were speaking of a 100-machine cascade by 1993 and of a 500-machine cascade by 1996. Much larger cascades are required to produce sizeable quantities of HEU.

Iraq was also working on weaponization. The episode of the Krytrons, which were seized at Heathrow airport in September 1989 in a sting operation, suggested the existence of such a programme. But if the existence of the weaponization programme was not a major surprise to national intelligence, the fact that the main facility in which it was developed (Al Atheer) had not been bombed during the war suggests that some fundamental aspects of the weaponization programme were not known.

The weaponization programme was still at an early stage when it was abruptly interrupted. The Iraqis seemed to have under control all the requirements to build a crude, heavy, 800 kg workable nuclear device whose yield would be some two to 15 kilotons. The existing design was what United States nuclear-weapon designers would refer to as a relatively unsophisticated but workable implosion approach.

Implosion, although more difficult than the gun-type approach, has the major advantage of requiring a much smaller critical mass of HEU. Another reason for that choice may be the fact that Iraq apparently had long-term ambitions in nuclear-weapons technology. The programme was evidently designed around grandiose facilities to be able to produce a sizeable number of nuclear weapons.

There are some questions as to what initiator Iraq was planning to use. The secret document seized by IAEA suggests that the initial burst of neutrons would be produced by the well-known combination alpha emitting Po^{210}, coupled with Beryllium, to transform the alpha particle into neutrons, separated by a gold foil, to make sure that the physical process would take place at the right moment. But Iraq, by irradiating Bismuth in IRT 5000, had the capacity to produce microgram quantities of Po^{210} when milligram quantities were required. It seems that the Iraqis were thinking of developing for their needs a deuterium-tritium approach similar to that used in commercial devices for the study of underground water.

Although it is wiser to speak of what is known, it is useful to speculate on what the UNSCOM/IAEA investigation could have failed to identify.

There have been rumours of secret underground nuclear reactors. What seems to give credence to that hypothesis is the fact that Iraq had an underground oil refinery and many other underground facilities. Although the hypothesis of an underground nuclear reactor cannot be dismissed completely, it is far-fetched. Iraq would have had to design its own reactor, which burned natural uranium and did not use heavy water, since it could not produce enriched uranium in significant quantities. That is a tall order for a country which needed outside help to operate its centrifuges. Furthermore, operating reactors generate large quantities of heat and radioactivity which are difficult to conceal. Extensive searches were conducted for this hypothetical reactor. Scuba divers inspected the Tigris river, and samples were taken along all the rivers of Iraq, to no avail.

Less frivolous are the uncertainties which remain concerning the inventory of Iraq's nuclear material. Iraq purchased hundreds of tons of uranium from a variety of sources and produced significant quantities itself. IAEA has attempted an exhaustive inventory of Iraq's uranium in its different forms and has stated that it was not possible to suppress completely the uncertainties in the inventory. Uncertainties of one or two per cent still represent significant quantities of nuclear material unaccounted for.

Of serious concern also is the possibility that Iraq has concealed sizeable quantities of hardware buried in the sand in scattered locations.

Iraq's nuclear weapon programme

Thanks to the UNSCOM/IAEA investigation, it is now possible to have a reasonably precise idea of how Iraq's quest for nuclear weapons proceeded. That effort violated the essence of the NPT. At the same time, since Iraq violated the safeguards requirements only slightly, an intriguing question is whether, when and in what sense did it violate its obligations with respect to the nuclear non-proliferation Treaty?

Possession and manufacture of nuclear weapons is prohibited for non-nuclear-weapon States parties by the NPT.

In the case of Iraq, the sudden increase in oil prices decided by OPEC in the mid-1970s suddenly provided Iraq with new resources, while putting oil importers which, like France, were nuclear-technology exporters, in a situation of oil-dependence. France, which of course was not an NPT party at the time, embarked on an "oleonuclear policy", selling French nuclear technology at high prices to selected oil-producing countries at a time when this was viewed as consistent with the security interests of France and its allies.

In the mid-1970s, Saddam Hussein, then already close to power, negotiated the purchase of a French nuclear reactor. The first choice of Iraq was a "gas-graphite" reactor, burning natural uranium and producing large quantities of plutonium. (The chemical extraction of plutonium from spent fuel is much less difficult than the enrichment of uranium.) Although Iraq could have legitimate reasons to be interested in that technology, the deal was vetoed by then French President Giscard d'Estaing as "too proliferant".

France then offered instead the Osiris experimental reactor. Osiris is an expensive 50-mw reactor, burning weapon-grade uranium (93 per cent) to produce high intensity neutron fluxes. Although the fuel was highly enriched uranium, the reactor itself was not optimal for a nuclear-weapon programme. Iraq was probably aware of that and examined the pros and cons for a year before accepting the arrangement. The only way Iraq could use Osiris (dubbed Osiraq) for the manufacture of nuclear weapons was by using a neutron flux to irradiate natural uranium and produce plutonium. That is not an efficient way to produce plutonium in significant quantities. Had Iraq acquired large quantities of plutonium while under safeguards, it would have been much closer to nuclear-weapon capability than it was able to become by acquiring the French nuclear reactor Osiraq. It is impossible to know what Iraq would have done with the Osiraq reactor because it was never operational. It was destroyed by

Israel in June 1981, a few weeks before it was due to become critical, and it was never rebuilt.

Despite the fact that Osiraq was sub-optimal for nuclear-weapon research and despite the fact that research in nuclear technology for peaceful purposes is protected and even encouraged by the NPT, the bombing of Osiraq by Israel was generally well received by the international community. Admittedly, Osiraq was even more sub-optimal for electro-nuclear energy, and the interest of Iraq in electro-nuclear energy was never as obvious as its interest in other forms of nuclear power, with more ambiguous potential applications.

The bombing of Osiraq became a defining moment for Iraq's nuclear-weapon pursuit. Iraq abandoned the plutonium approach, the apparently easier route to nuclear weapons. The extraction of plutonium is easier than the enrichment of uranium, as it is possible to exploit the fact that plutonium has different chemical properties from the elements from which it is separated. But plutonium has to be manufactured in a nuclear reactor. Iraq realized that it would not be able to operate a nuclear reactor without the active interference of Israel. Iraq then embarked on a covert programme of uranium enrichment.

The EMIS programme must have begun in earnest just after the bombing of Osiraq. The head of PC-3, a high-energy accelerator physicist, had the right kind of competence for such a programme. EMIS has the advantage of using technologies which are deemed non-sensitive by export controllers. The Iraqis managed to purchase all the components and to pursue the programme without raising any suspicion. On the other hand, the EMIS approach to uranium enrichment had been abandoned by the United States for good reasons. Not only is the production of ion sources with sufficient yield problematic; EMIS is not a cost-effective way to obtain enriched uranium. Furthermore, the technical problems, small and large, that the development of a large-scale EMIS programme implies, seriously stretched the technical depth of the Iraqis. The programme probably was proceeding at a much slower pace than expected. Some high-ranking Iraqi scientists suggested that the EMIS system in Tuwaitha never delivered on its promises and even that the EMIS programme was ultimately detrimental to the enrichment effort, as it used billions of dollars, and there were reasons to believe that it never would deliver the expected 15kg per year of HEU.

Today, all that is left of EMIS is rubble and melted metal, and it is difficult to make an informed judgment on what exactly it would have delivered. What is clear, though, is that Iraq pursued a number of approaches to uranium enrichment, notably centrifuge, gaseous diffusion, and a chemical approach which exploits the difference in reaction speed of different isotopes. The difficulty with gaseous diffusion that Iraq apparently never resolved was that of finding a suitable diffusion barrier.

In 1987, Iraq upgraded its centrifuge programme. Possible explanations for that include the fact that the development of a centrifuge programme would have required external help. Centrifuge technology uses very special material like maraging steel. The operation of centrifuges has its share of complications. In particular, it seems that the Iraqis had difficulty at the beginning with the vacuum in the centrifuge. The vacuum has to be fine-tuned to put the feed UF_6 in the right physical condition and to prevent condensation. To avoid having to put that equipment under safeguard, secrecy was needed.

In the early 1980s Iraq had no reason to hope that it would get that kind of external support. That may be one reason that EMIS looked more attractive at first. But Iraq soon learned that with enough money and an efficient network of front companies, it could infiltrate the Western nuclear industry and purchase basically whatever help and equipment it wanted. Consequently, it bought experimental centrifuges and large quantities of equipment to manufacture centrifuges indigenously. The design they used corresponded to the Urenco technology of ten years earlier. In the period 1987–1989, Iraq recruited at least one consultant from the West to assist in its efforts.

In 1991, the Iraqi centrifuge programme was still years away from large-scale production. The main manufacturing plant at Al Furat was still under construction. But the programme was proceeding satisfactorily and, some years down the road (maybe around 1998), would have been able to deliver about 25kg per year.

How much of the large quantities bought by Iraq for that programme has escaped the scrutiny of the UNSCOM/IAEA investigation is probably the largest and most unsettling uncertainty remaining today.

At what point did Iraq unambiguously violate the NPT? The provisions that non-nuclear-weapon States have to fulfil are specified in article II and article III of the Treaty. Under article II, the non-nuclear-weapon States parties undertake not to receive the transfer of nuclear weapons or other nuclear explosive devices; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek to receive any assistance in the manufacture of nuclear weapons.

Under article III, the main obligation is compliance with the safeguards system. Whenever Iraq purchased nuclear components under safeguards, it did so in a way that indicated the least significant violation possible of its safeguards obligations. The only clear violation by Iraq of article III was the episode which led to the production of a minute quantity of plutonium and involved such small quantities that it escaped IAEA scrutiny.

On 18 July 1991, the Board of Governors of IAEA established that Iraq's failure to comply with its safeguards agreement with IAEA constituted a breach of its international obligations, and on 15 August 1991, the Security Council, in resolution 707, condemned the "non-compliance by the Government of Iraq with its obligations under its safeguards agreement.... which constitutes a violation of its commitments as a party to the Treaty on the Non-Proliferation of Nuclear Weapons of 1 July 1968".

Like the whole Iraqi programme, the weaponization programme was certainly not in compliance with the *spirit* of the NPT. What the NPT prohibits in that area is unclear.[1] But it is safe to assume that many advanced industrialized nations have made secret studies of nuclear-weapon designs.

If Iraq had not had to violate the safeguard system of the NPT to reach the point it had reached in its nuclear-weapon programme, it would not have been able to complete that programme without significant violations of the safeguards system. Iraq's enrichment programme was not yet operational, but to produce the fuel for its weapons, it would have had to divert significant quantities of uranium from peaceful purposes to weapons use. In that sense, the statements made by Iraq that no political decision had been taken to make nuclear weapons could be construed as meaning that no decision had been made to begin to divert safeguarded nuclear material.

There is no reason to believe that IAEA would have failed to detect that. The NPT provides the international community with the official means to detect a nuclear-weapon programme and a legal basis to act only at a very late stage.

Lessons and consequences

Although we know a good deal about Iraq's quest for nuclear weapons, there are still unsettling uncertainties as to what may have escaped the scrutiny of the UNSCOM/IAEA investigation. But we probably shall not learn anything significant about Iraq's nuclear-weapon programme between now and the day that sanctions eventually will have to be lifted. One long-term monitoring mission which will follow will be to make sure that Iraq does not resurrect its nuclear-weapon programme at any level. That could translate into a mammoth monitoring system, although it does not necessarily need to do so, as manufacturing nuclear weapons requires many steps. To maintain secrecy in the development of some steps may be possible, but to maintain secrecy in all of them and manufacture a nuclear weapon unbeknown to the rest of the world while under international scrutiny would be remarkable.

The monitoring system which will be put in place in Iraq has the single purpose of fulfilling the mandate of resolution 687 (1991). At the same time it is reasonable to hope that it will be designed bearing in mind the fact that a number of countries in addition to Iraq may flirt with the idea of crossing the nuclear-weapons threshold. The level of transparency achieved by international monitoring does not have to be tuned to the political acceptability of the regime in the international community. The architecture and design of the monitoring system that will be used in Iraq should be flexible enough to adjust to changes in the technology or methodology of monitoring or to changes in the political environment while maintaining an image of international respectability and of political independence. That system must also be cost-effective. In other words, that system must set an almost perfect precedent.

The fact that nations officially supporting the UNSCOM/IAEA investigation are not in a position to provide the investigation with full information about the dealings of some of their citizens or companies with Iraq is a serious impediment to the investigation and puts those nations on a weaker moral ground than would otherwise be the case. Some of those nations have taken or are taking corrective action. The corrective action of some countries may include, if not consist in, strengthening the export control system by outlawing more transactions. That is not the best course of action, as it will reinforce the downside of export controls, leading them to degenerate into technology-denial policies without improving the control of nuclear proliferation, which becomes less and less a supply problem. At a time when transparency in nuclear activities will need to be improved, exporting countries will be busy denying supercomputers to developing countries. Supercomputers are used in "technologically advanced countries" for the development of nuclear weapons. But the fact that nuclear weapons were developed before supercomputers existed, or that using supercomputers is not a good method for building a quick and dirty nuclear weapon, means that controlling the export of supercomputers is beside the point. Iraq did not have any supercomputer, but it had a nuclear-weapons programme.

The fact that several third world countries could make good use of supercomputers for their development should not be treated as an academic consideration. To ignore that point would tend to antagonize those nations and curtail their legitimate pursuit of economic development instead of enhancing the cooperative control of nuclear proliferation.

The failure of the international regime defined by the NPT to prevent Iraq from going too far in its quest for a nuclear-weapons programme does not have a simple cure. IAEA applied scrupulously the letter of its legal mandate. It never blew any whistle because it had no whistle to blow. When a United States IAEA inspector testified to the United States Congress in 1981 that he had serious suspicions about Iraq, he was promptly fired from IAEA. Although some seem to believe otherwise, IAEA's attitude is not the result of a morbid complacency with respect to nuclear weapons and a wish to promote the safe exploitation of nuclear energy; its attitude and action derive from its mandate.

The problem is fundamental. An international nuclear order has still to be established which will be able to keep the nuclear-weapon threat under control while permitting the free exploitation of nuclear energy. The system proposed by the NPT has turned out to be the worst of all possible systems, except for any realistic alternative, to paraphrase a saying about democracy. The centre-piece of the system is the mass balance of nuclear material. IAEA has developed very powerful and reliable techniques to monitor the nuclear material under safeguards. The system has never failed.

The problem with understanding what happened in Iraq is that, up until the time that the UNSCOM/IAEA investigation started, Iraq had not grossly violated the safeguards system. As long as there is no violation of safeguards to report, IAEA is not mandated to speak up. It would be inappropriate for an international organization like IAEA to initiate criticism of parties to the NPT if there were no hard evidence of non-compliance with what IAEA is mandated to verify. If that were done, the Agency would quickly lose its credibility. In the same way, IAEA cannot be in the position to know so much about its members that it can be construed as having spied on them. For better or worse, its mandate has to be defined precisely and its access to information limited. The political independence of the institution is a vital component of its function. It therefore cannot and should not tolerate any of its inspectors reporting to their country of origin, least of all if that country is a major nuclear Power.

The fact remains that the suspicions reported to the United States Congress in 1981 turned out to be justified, and IAEA did not act on them. IAEA would not have been in a position to build a compelling case against Iraq. Had the EMIS programme been better publicized, it might have been justified for isotopic research. Research with that kind of technology is pursued in the United States laboratory at Oak Ridge and is protected by the NPT. In the same way, the centrifuge programme could have been justified on the grounds that many non-nuclear-weapon States use that technology. Although it would be simpler to put the blame on IAEA for a glitch in the enforcement system of the NPT, the problem raised by Iraq is in the system, i.e., the nuclear regime defined by NPT, not in the instrument of enforcement.

At what point in the development of Iraq's nuclear weapon programme should the international community have been entitled to intervene? The initiatives that Israel took against Iraq's nuclear-weapon programme have been welcomed by some, but they clearly represent an unacceptable norm.

Iraq was nearing the nuclear-weapon capability threshold when its programme was interrupted by the Gulf war. The non-nuclear-weapon States parties to the NPT which came as close or closer to having that capability did so before they were NPT parties—Canada and Sweden long before the NPT was written, and South Africa more recently. Whatever means international law will give the international community to respond to the concerns raised by the nuclear ambiguities of Iraq would have to be used to check any country which sought to develop nuclear weapons while being a non-nuclear-weapon State party to the NPT. This would be fully in line with article II of the NPT which bans the manufacture of nuclear weapons.

An inescapable lesson of the Iraqi experience is that there is a need to strengthen the control of nuclear proliferation at a fundamental level. It is also clear that the political ramifications of any serious strengthening of the nuclear non-proliferation regime go deep into sensitive territory.

Notes

1 G. Bunn, R. Timerbaev: "Nuclear 'weaponization' under NPT: what is prohibited, what can be inspected, who should do it?" CISAC, Stanford report, 1993. The answer is that this is a debatable matter.

Implementing the Chemical Weapons Convention

Practical Aspects Concerning The Implementation Of The Convention Prohibiting Chemical Weapons

Serguei Batsanov

Introduction

The successful conclusion in September 1992 of the Geneva negotiations on the Convention Prohibiting Chemical Weapons marked the end of only one important phase of the effort to totally eliminate this class of weapon of mass destruction. The next task is to make the Convention actually work, a challenge at least as formidable as that involved in reaching this agreement in the first place. Three major areas of work can be identified: the development of detailed procedures for the implementation of the Convention; the designing and building of an international organization to carry out verification and other activities; and, last, but certainly not least, the planning and executing of all necessary

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preparations within the countries that are perspective parties to the Convention. While the first two tasks may be dealt with mainly in the framework of the Preparatory Commission in The Hague, the third must be carried out in the Signatory States themselves.

In order to assess the magnitude of this third task, one should recall the unprecedented nature of the chemical weapons Convention. Not only does it prohibit and provide for the elimination of an entire category of armaments, but it also institutes a rather complex system of international verification, covering military as well as numerous civilian facilities, and—through the mechanism of challenge inspections—the whole territory of any State party. The system is designed to verify both the destruction of chemical weapons and the disposition of chemical-weapons production facilities, as well as to guard against the re-emergence of such weapons and facilities in the future. The Convention provides for numerous regular and case-by-case declarations, which have to be as accurate as possible. In fact, the Convention affects a broad range of governmental agencies and private industries.

Therefore, simple ratification of the Convention by signatory States does not suffice: those States must undertake comprehensive programmes to prepare *themselves* for the implementation of the Convention. Indeed, in many of these countries, parliaments will not ratify the Convention without approving the laws and regulations necessary for its implementation. Time is limited: member States of the Preparatory Commission have agreed to act on the assumption that the Convention should enter into force in January 1995. That means that 65 countries should submit their instruments of ratification six months before that date, in July 1994.

What is to be Done?

The purpose of this article is not to describe provisions of the Convention, but rather to suggest what kind of practical actions governments may need to take in order to prepare for implementation of the Convention.

National preparations in most States can be broken down roughly into four interrelated categories:

—Specific practical measures to collect and put together declarations under the CWC and preparations for receiving the inspection teams;

—Establishment of the necessary government infrastructure, including the designation or establishment of an appropriate national authority;

—National implementing legislation and/or administrative regulations;

—Ratification *per se*.

Practical Measures

The main purpose of the chemical weapons Convention is to ensure the elimination of chemical weapons and chemical-weapons production facilities. Hence, it is expected that the most important and difficult preparations are those required to ensure implementation of the Convention in those two respects, especially with regard to the destruction of chemical weapons. This involves verification of the abovementioned activities. However, only a limited number of countries will be affected fully by those obligations and, consequently, will be expected to prepare for their implementation. They are the two major possessors of chemical weapons, namely, Russia and the United States, and possibly a few others. Russia and the United States have openly declared their possession of chemical weapons and chemical-weapons production facilities. Another known possessor is Iraq, but its chemical weapons potential, as well as that of other weapons of mass destruction, is being addressed by the United Nations Security Council.

Therefore, this article begins by discussing the preparatory tasks likely to be applicable to most countries, if not all. Issues regarding destruction of weapons are dealt with briefly in the third part of this article—and, in fact, they probably merit a separate article.

Now we come to the chemical industry. The Convention requires that States parties report on industrial chemical facilities handling the chemicals listed in relevant schedules, as well as other discrete organic chemicals (see the Annex on Chemicals of the chemical weapons Convention), if amounts of those chemicals are above certain specified thresholds. How does a government ensure that it has a correct and complete knowledge of what those facilities are and where they are located? The obvious answer could be recourse to statistics. But in many countries existing systems of statistics do not satisfy fully the requirements of the Convention. They may be useful as a starting point, but further efforts are needed in order to avoid submitting incorrect information to the Organisation for the Prohibition of Chemical Weapons (OPCW).

A government may wish first to establish as long a list of potentially eligible facilities as possible, and then delete those facilities which, for one reason or another, do not qualify. It may be useful for a government to keep, for its own purposes, information on facilities that produce relevant chemicals in quantities a little below declaration thresholds in order to be able to answer possible requests for clarification from other parties, or from the OPCW. Complete identification of facilities may require the involvement of economic ministries, chemical producers' associations, customs/export control agencies and other entities in addition to statistical services. It is also useful to bear in mind that a number of any country's facilities to be declared may be listed not in the chemical but, say, in the pharmaceutical industry rosters.

Once industrial facilities are identified, new problems may arise such as: how to ensure that they report to the government exactly what the government needs to know in order to prepare its own declarations to the OPCW. In some countries, the existing legislation may not be sufficient to ensure the submission of critical data by industry. In a number of cases, governments may need to request more detailed information from industry than they themselves are obliged to submit to the OPCW, and, in the process, establish national reporting deadlines that would be more stringent than those required by the Convention. That may actually be reasonable and necessary, since governments will need some time to analyse the information they receive and, if necessary, check its accuracy. In that case, governments, most probably, would have to establish their own reporting regulations for industry, make sure that all affected facilities were properly informed of those reporting requirements and time-frames, and develop their own means of checking compliance.

The important point is that even if a government assumes there are no facilities to declare in its country, it may be wise to check its own situation carefully.

In this process of "internal investigation," any State should also check whether there are facilities which fall under the definition of "chemical weapons production facilities", even if they have never produced chemical weapons. Such a check is necessary because the definition of a "chemical weapons production facility" provided for in the Convention may cover certain industrial facilities even if those facilities were never intended for, or used for, chemical weapons production. For example, if there happens to be an industrial facility which produces more than one ton of an unscheduled chemical, legitimate consumption of which in its own country is less than one ton, this may very well be the case. Thus, while the obligation to declare chemical-weapons production facilities applies first of all to countries that produced the chemical weapons, preparatory work in that regard may well be needed in other countries as well. Another question to think of is: what (if any) facility would be approved by the State party and declared to the OPCW as a single small-scale facility for production of Schedule 1 chemicals for research, medical, pharmaceutical or prospective purposes, or if there are other facilities to be approved and declared as synthesizing more than 100 grams but less than 10 kilograms per year of Schedule 1 chemicals for research, medical or pharmaceutical purposes.

The Provisional Technical Secretariat was mandated by the Preparatory Commission to initiate a kind of trial submission of declarations on a number of facilities that can be expected to be covered by the CWC regime of the Convention. So far, about 20 countries have responded, providing information which is treated as confidential and non-binding. Participation of countries in that trial exercise could help them prepare their real declarations and identify problems that need to be addressed. It would also be useful for them in assessing the scope of their future efforts to ensure compliance with the Convention.

Another issue that a government might wish to explore is whether there could still be old chemical weapons on its territory dating from any period before 1946. Military archives need to be consulted in that regard. Additional obligations will arise for a country if it has such weapons.

It is also necessary to check whether there are chemical weapons which have been abandoned on the territory of a State by another country, and, especially, if a country possesses chemical weapons, or possessed them in the past, and whether some of those weapons were left abroad for one reason or another.

Finally, it is necessary to review the archives on military cooperation with foreign nations and to check whether any chemical weapons were transferred to, or were received from, another country.

All this work has to be done before the entry into force of the Convention, although the Convention itself does not explicitly mention such preparations. But failure to complete this work in good time would result in serious difficulties for a State in complying with the obligations once it becomes a party to the Convention because of the very short time—thirty days after entry into force—given by the Convention for the deposit of necessary declarations.

Another important area of preliminary work to be planned prior to the entry into force of the Convention relates to the need for States to be properly prepared to receive inspection teams and to be able to respond quickly and efficiently to the unique needs of such teams when they arrive. That is a complex operation requiring the careful planning and involvement of a number of different governmental agencies and enterprises. A detailed check–list of activities would be very useful for each country to have, since it could address many practical questions, such as:

—What place should be chosen as a point of entry (POE)? According to the Convention, any location in a country should be reachable from the POE within 12 hours In most countries, the POE would probably be the capital, or a major city, with a large airport, but that is not always the obvious solution. Large countries and States with overseas territories might need more than one POE. Two conundrums could be: What should be the POE for The Netherlands, the Host Country for the OPCW, or for Belgium, which is much easier to reach from The Hague by a van than by aircraft?

—Is the customs system capable of clearing expeditiously members of inspection teams and equipment?

—What means does the government have to ensure speedy transportation of the inspection team to the inspected sites, and who must provide those means if generally available means of transportation are not adequate or safe, or if they are simply too slow?

—What kind of communications will be provided by the government to the inspection team?

—Where will inspectors live and what protection, if needed, will they receive? As far as routine inspections at declared facilities are concerned, it will be useful to negotiate with the management there, or with local authorities, provisions for covering the costs of accommodation, food supply etc., to be reimbursed subsequently by the OPCW.

—What in–country escort personnel is available to accompany inspection teams?

—Is there an office in the government which is on duty 24 hours a day to receive notification of inspection and to trigger all the necessary mechanisms?

This short check-list of questions is far from exhaustive, but it illustrates the need to involve in the preparatory process a number of governmental agencies, such as foreign affairs and defence, agencies responsible for industry, transportation, communications, health, police, customs and, last but not least, finance. The Secretariat in the Hague is developing a much more extensive check-list for signatory States.

There is also a need to prepare for inspector-clearance procedures which require, among other things, speedy issuance of multiple long-term entry/exit visas to inspectors accepted by the government. Obviously visa/immigration rules in a country must be checked to ascertain whether they are consistent with the provisions of the Convention and whether changes of those rules are necessary.

Perhaps some of the most difficult tasks in the area of practical preparations are those connected with the preparation of facilities for inspection, especially in relation to protection of confidential business information (CBI). Our contacts with the chemical industry indicate that a number of plant managers might be surprised to learn that their facilities are subject to inspection. "We never produced chemical weapons," they would say. "Why should they inspect us?" "How can we prevent disclosure of confidential business information?" It is highly desirable that those managers be well briefed about the Convention and its provisions designed to protect confidential information, and that they be also advised on what practical protective measures they could undertake in their plants within the limits allowed by the Convention (like shrouding certain pieces of equipment, or even covering up labels on shipping containers indicating trade partners). The Secretariat is very sensitive to the need to protect confidential information, but governments might also consider procedures to be applied against unauthorised disclosure of such information within the country.

Another category of facilities requiring special preparation for inspection are sensitive sites unrelated to the Chemical Weapons Convention. They can be either military installations or civilian plants with sensitive technology, such as defence contractors. Any of those theoretically can be subject to a challenge inspection. A government preparing to implement the Convention might wish to identify the most sensitive of such unrelated facilities and educate management and personnel about the Convention and ways of protecting unrelated sensitive information, including—in the first place—the famous "managed access" procedures set forth in the Convention.

Why is it necessary to address unrelated facilities? Because even if nothing illegal is taking place there, those directly responsible might be so embarrassed by an inspection that they could try to deny access, thus preventing their government from demonstrating compliance with the Convention. On the other hand, a manager eager to prove the absence of chemical weapons might open up the entire facility, compromising secrets that the inspection team would not even ask about. Such a situation could result in at least internal complications for the government and the facility involved.

The purpose of the OPCW will be to carry out its job in the least intrusive way possible. But to achieve this the inspectors will need cooperation from those they inspect. The better a government prepares, the more cooperation it will be able to provide, and the less intrusive the inspection can be—provided, of course, that there is no cheating.

States parties have certain obligations that cannot be avoided. A central one is to provide access to all sites that are subject to inspection. Hence, the question is: Does the legal system in a country permit such access to any site or not? What should be done if there are laws preventing access to private property? In some countries, such as the United States, this question is still the subject of debate among legal experts.

There are a number of other steps States parties might wish to take to facilitate their interaction with the Organisation, for example, thoughtful selection of national candidates to be recruited as inspectors. The Preparatory Commission has already approved a general programme for inspector training which may be launched as early as August 1994. Signatory States have been invited to submit the names of candidates. The Commission is especially interested in attracting mid–career chemical engineers with good communication skills and a good command of languages. Military personnel, especially chemical protection and munitions experts, are also welcome.

Another example—governments may wish to propose inspection equipment for possible acquisition by the

Secretariat. Specifications for that equipment have been approved by the Preparatory Commission and relevant requests have been sent out by the Secretariat.

National Authority

The practical steps described above entail well-coordinated efforts on behalf of governmental bureaucracies and involve a variety of agencies and departments. It is not by accident that the Convention requires that each State Party designate or establish a National Authority to serve as the national focal point for effective liaison with the Organisation and with other States parties. The OPCW is to be notified about the National Authority as soon as the State concerned becomes a party to the Convention. That means that the National Authority must be in place before a State becomes a Party.

The Convention does not say exactly how a National Authority is to be established, nor does it specify its functions in detail. The reason for that is that States have quite different bureaucratic systems, and it would be inappropriate to impose one model on everyone. However, the problems that have to be solved are, in many cases, similar.

First of all, a State has to identify agencies that will be involved in the implementation of the Convention; in fact, the most obvious candidates have been mentioned earlier. In some countries, the necessary bureaucratic infrastructures can be found in agencies dealing with the agricultural use of fertilizers or pesticides, environment, or drug control.

The next question is to decide which of the agencies should take the lead. That is where the bureaucratic traditions and implementation requirements in each country come into play. In countries with an important chemical industry, a ministry of trade/industry might be appropriate as a foundation for the National Authority. Still, it appears that in many States the Ministry of Foreign Affairs would like to have control over relations with OPCW, which are, in fact, a part of a country's external relations.

In other cases, a special agency may be established. This is what the Russian Government did by setting up the Presidential Committee on Convention–related Issues of Chemical and Biological Weapons. It appears that such an approach may be attractive first of all, but not exclusively, for governments with big bureaucracies and particular burdens of implementation. On the other hand, it might be noted that Nigeria has also chosen to follow a similar approach.

Wherever in the government the National Authority is located, it will face difficult questions of inter-agency relations. It is evident that interested ministries would not be eager to give away their powers in vital areas of government, nor would it be reasonable to duplicate in the National Authority all the mechanisms which enable other agencies (for example) to collect statistical data from the industry, or to ensure the protection of defence–related secrets. However, it is up to the National Authority to see that all information is collected on time, that all procedures for receiving inspections are in place, that all necessary reports sent to the OPCW are consistent and accurate, and that all inter-agency decisions on implementation issues are carried out properly by those responsible. Such a National Authority would not be a bureaucratic monster but an effective tool of coordination.

In order to enable the National Authority to function, some States, depending on their practices, might need to adopt special legislation; in some cases an executive decree would suffice.

As a first step towards setting up a National Authority, it could be useful to establish a small group of people representing key agencies and charged with preparing relevant proposals for consideration by the government.

Legislation

The Convention requires that each State party, in accordance with its constitutional processes, adopt the necessary measures to implement its obligations under the Convention. That includes the prohibition of any activity in contravention to the Convention, as well as the enactment of penal legislation with regard to such activity.

In fact, the prohibition and penal legislation should cover not only any natural or legal persons anywhere on the territory, or in any other place under the jurisdiction of a State party, but also natural Persons of that State party beyond its borders. For a number of States, that means amending their penal codes.

In addition, as described earlier, new legislation might be required to enable governmental agencies to collect information from the chemical industry to ensure its proper use and protection within the government, to guarantee access to OPCW inspectors to private premises and to sensitive military facilities, and to set up a functional National Authority.

To sum up, we are talking about a complex legislative package the preparation of which requires time and a serious analysis of the different laws of each country in the light of Convention requirements. Consideration of such a package by parliaments may also take some time, especially in cases where a parliament has its own programme for preparation and adoption of new laws and legislation and may not be so eager to delay work on other draft laws to give priority to Convention legislation. This means that in reality very little time is left to finalize all the preparations for the entry into force of the Convention, which, as mentioned earlier, is expected to take place in January 1995. It might be that not all implementation measures would require new legislation; some of them might be covered already by existing laws or codes in a country. For others, it would be sufficient to adopt a relevant government decree. It is important, however, to begin that work as soon as possible.

Ratification

According to information available to the Secretariat, practically none of the 150 plus signatory States which have not yet ratified the Convention has any serious political problem with ratification. However, only four have completed the ratification process so far, because of complexities of the preparatory process described above. Many States are in various stages along the way towards ratification.

Preliminary work conducted by many governments indicated that respective parliaments would not ratify the Convention without taking action at the same time on legislative packages for national implementation measures. There are some notable exceptions. Sweden ratified without waiting for a package because, on the one hand, Swedish laws already contain many provisions usable for CWC purposes and did not require much change; and, on the other, the government managed to convince the parliament of its ability to deliver legislative proposals in a short time, and, in fact, delivered.

It appears that it is not always necessary to submit the Convention to the parliament only after all other necessary proposals and documents are ready, even if eventually they are necessary for the ratification. The action by United States President William Clinton, who sent the Convention to the Senate without a complete legislative package, is a welcome example, since President Clinton's action allows the Senate to begin preliminary familiarisation of the Convention earlier than it might have if it had had to wait for finalization of an inter-agency review of draft legislation.

The Provisional Technical Secretariat is monitoring actions by governments in the area of ratification because it is extremely important to know in advance the approximate date for the entry into force of the Convention. A number of large-scale and fairly expensive programmes designed to build various elements of the OPCW, including the evaluation and purchasing of equipment, the hiring of additional staff, the training, and subsequent recruitment of inspectors, which have been approved by the Preparatory Commission, should be launched on time—or delayed—depending on when the sixty-fifth instrument of ratification is deposited with the United Nations Secretary-General. With this in mind, the Executive Secretary of the Commission has asked signatory States to inform the Secretariat about progress achieved in ratification, designation of National Authority, and related matters. So far, information has been received from about twenty governments.

We need to know much more about situations in the signatory States before definite conclusions can be reached. I hope that by Spring 1994 the situation will have clarified itself significantly, and that by that time the Secretariat will be able to prepare a special report—or reports—on the subject.

The Secretariat is also willing to assist signatory States in their preparatory work by providing necessary information and advice on organizational, or merely technical, matters through regional, national, and global seminars.

Destruction of Chemical Weapons

The obligation to destroy chemical weapons will not affect all parties to the Convention, but it is, without doubt, the centre-piece of the whole operation. The Preparatory Commission has agreed that the participation in the Convention of Russia and the United States—the two major possessors of chemical weapons—is vital for its success. Both countries have started preparations for the destruction of their chemical weapons (according to official information, Russia has 40 thousand agent tons of CW, the United States around 30 thousand agent tons). The experience of each country to date indicates that "chemical demilitarization" is an extremely difficult exercise, requiring considerable amounts of research and development, financial resources, specially designed technology, and an effective public-information strategy. In both countries final solutions have not yet been achieved, but progress is being made.

The United States addressed the problem much earlier than Russia, or rather, the then-Soviet Union, and has achieved much more. The prototype for the proposed United States destruction facilities has been built on Johnston Island in the Pacific and is operational.

The second United States destruction facility, in Tooele, Utah, is soon to be commissioned, and seven more are planned. The United States "ChemDemil" programme has a sound financial foundation. The process, however, was, and still is, not easy or free of complication. Several options for the location of destruction facilities had to be discarded before consensus was achieved to destroy chemical weapons at their storage sites. Although that is perhaps the most expensive option, transportation of chemical weapons to centralized destruction plants was found not to be practical due to the opposition of the states and counties through which the chemical weapons would have to be transported. There is still local opposition to some of the planned destruction facilities, and environmentalists are questioning the single-stage process, based on incineration technology, adopted by the United States for the destruction of its chemical weapons arsenal, There is powerful pressure to search for "alternative technologies."

Russian difficulties are even more serious. Preparations for destruction began in the Soviet Union only in the mid-1980s. The first industrial-scale prototype destruction facility was scheduled to begin operations in 1988, but that never happened. When the decision to build a destruction facility in the City of Chapaevsk was taken, the system of government was such that no one considered asking the local population about their views or explaining why the facility was needed and what features of its design would make it safe. When the facility was about to be commissioned, the political situation in the Soviet Union had changed drastically, and local opposition forced the Government to pledge that it would never use the plant for chemical weapons destruction. That is just one illustration of Russia's problems. More difficulties followed in other places earmarked for the construction of demilitarization facilities. The problem has become an issue for local and country-wide politics. At the same time, central Soviet authorities, living through their last months of existence, did not pursue the issue of negotiating with the local population and local councils, nor did they work effectively on the overall chemical weapons destruction programme. Soon after the disappearance of the Soviet Union, Russian President Boris Yeltsin confirmed Russia's commitment to destroy ex-Soviet chemical weapons stocks. President Yeltsin's special decree in the Spring of 1993 caused a revitalization of work. The Russian authorities concluded, as their American counterparts had done in the past, that their original idea of having a small number of destruction facilities to which chemical weapons would be delivered from the storage locations should be abandoned in favour of on-site destruction. That means that each storage site which is proposed will have to possess its own destruction facility.

The first significant progress in Russia was achieved in autumn 1993, when agreement in principle was reached with local authorities concerning the locations for two destruction facilities. This gives Russia a chance to begin destruction in two or three years' time.

Yet much more remains to be done to make it happen. Russian officials are highlighting the need for international cooperation to help accelerate the preparations of a destruction programme—both in terms of money and technology. The United States has offered to help, and intensive discussions on this issue are taking place between Russian and Germany which are already yielding some positive results.

In conclusion, I wish to welcome the initiative of the United Nations Centre for Disarmament Affairs in launching a dialogue for the sharing of information on the implementation of the Chemical Weapons Convention. I hope that other authors will follow this initiative in various media and contribute to the search for means for the effective implementation of this important Convention.

Implementing the Chemical
Weapons Convention

The Preparatory Phase of Setting up the Organisation for the Prohibition of Chemical Weapons

Anil Wadhwa

As with any other major disarmament agreement, the completion of negotiations on the text of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (CWC) at Geneva in September 1992 was only the first step towards achieving its fundamental objectives. The signing ceremony at Paris on 13 January 1993 was the beginning of a new phase of implementing this comprehensive multilateral disarmament agreement, an agreement which, for the first time, provides for the elimination of an entire category of weapons of mass destruction under universally applied international control.

Realizing the importance of a minimum amount of time required to prepare for the proper implementation of the

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Convention, the negotiators at Geneva also framed a text to establish a Preparatory Commission, as part of the Convention, which was adopted through a resolution, without vote, by 130 signatory States at the signing ceremony in Paris in January 1993. Since the Convention was opened for signature, the number of signatories has risen to 157, and four States have already deposited their instruments of ratification with the Secretary General of the United Nations, who is the Depositary of the Convention.

The text of the Convention stipulates that it will enter into force 180 days after the date of deposit of the sixty-fifth instrument of ratification but not earlier than two years after it was opened for signature. Considering that this could happen in January 1995 and considering the magnitude of the obligations under the Convention, and the unprecedented scope and intrusiveness of its verification system, the Preparatory Commission, located in The Hague, and its Member States are under severe time pressures.

The Organisation for the Prohibition of Chemical Weapons, which will be set up in The Hague upon the entry into force of the Convention, must be organized and prepared for with unflagging and sincere efforts. The Preparatory Commission has a responsibility which is the envy of few. Effective implementation of the CWC, and ensuring "the rapid and effective implementation of the future OPCW", requires the development of detailed procedures for inspection, submission of declarations and various details of chemical technology, and the setting up of an infrastructure capable of making all those procedures work. For most of the signatory States, the CWC is their first involvement with a disarmament agreement that contains extensive reporting requirements and intrusive verification provisions that will impinge on military and industrial facilities alike. An enormous amount of work has to be completed by each State to participate fully and effectively in the implementation of the Convention.

While the political will and support of governments for what the CWC stands for has never been lacking among the signatory States, the task has become increasingly complex because the focus of activities now includes, along with governmental representatives at The Hague and in respective capitals, a broad group of lawmakers, technical experts, industry officials and representatives and public organizations throughout the world. With those new sources of input, the Preparatory Commission has to continuously guard against attempts to renegotiate some provisions of the Convention, while at the same time agreeing to whatever interpretations are necessary and reasonable for the formulation of practicable working rules. The Preparatory Commission, at its inception, thus inherited the responsibility of identifying its tasks and their respective degree of priority.

Fortunately, the first year of operation indicate that the Preparatory Commission, and its Provisional Technical Secretariat and member States, are equal to this daunting task. The work of the Commission is conducted in Plenary Sessions which adopt decisions covering all areas of work. Plenary Sessions are convened for about one week, several times a year, at intervals of roughly three months. The First Plenary Session was convened by the Secretary General of the United Nations in The Hague from 8 to 12 February 1993. By the end of 1993, a total of five Plenary Sessions will have been held. The Commission may establish other subsidiary bodies for the exercise of its functions, and specific issues are considered in Working Groups which meet concurrently with the Plenary Sessions. At present, there are two such groups. Working Group A deals primarily with organizational issues: rules of procedure, staff and financial regulations, and preparation of the budget and programme of work. Working Group B is responsible for the development of detailed procedures for verification and technical cooperation and assistance, with a view to monitoring compliance with the Convention. The next level of work is carried out in Expert Groups, which are responsible for preparing recommendations on specific issues, subject to the approval of the Working Groups and the Plenary Sessions. The meetings of those Expert Groups cover most of the time between Plenary Sessions.

All decisions of the Commission are taken by consensus. If, notwithstanding the efforts to achieve consensus, an issue comes to a vote, the chairman makes every effort to achieve consensus by deferring the vote for 24 hours. The fact that the procedure of voting has not yet been resorted to in the proceedings of the Preparatory Commission, is eloquent testimony to the willingness of member States to reach consensus on all issues. In order to ensure equitable geographical distribution, the chairmanship of the Preparatory Commission rotates among the five regional groups: Asia, Africa, Eastern Europe, Latin America and Western European and other States (WEOG) every six months, in alphabetical order. The chairmanship of the Commission has already changed hands twice, from Africa to Asia and now to Eastern Europe. At the Fifth Session of the Preparatory Commission in December, a new chairman from the Eastern European States was appointed. The vice chairmen, whose main task is to advise the chairman, are chosen by each regional group. Each group has its coordinator, who disseminates information to countries within the region in order to facilitate consensus on issues.

During tne First Session of the Preparatory Commission from 8 to 12 February 1993, a decision was taken to establish a Provisional Technical Secretariat (PTS). Mr. Ian R. Kenyon (UK), was appointed Executive Secretary and Head of the PTS. The PTS assists the Plenary and other meetings of the Preparatory Commission, and is helping to build up the future OPCW and its Technical Secretariat.

Moreover, it works to improve the dissemination of information to Member States on all aspects relevant to the implementation of the Convention. The PTS consists of five Divisions: Verification, External Relations, Legal, Administration, and Technical Cooperation and Assistance. By March 1994, approximately 84 staff members from signatory States, many of whom had themselves taken part in the negotiations on the Convention were working with the PTS. Care has to be taken to ensure that the senior staffing positions in the Secretariat are divided, as far as possible, in an equitable manner between the regional groups without sacrificing expertise. The activities of the Preparatory Commission and its PTS are funded by member States, based on the United Nations scale of assessments, adjusted to take into account differences between the United Nations membership and the membership in the Commission. The Commission and the PTS may also benefit from voluntary contributions.

Over the past few months, the Preparatory Commission has been successful in setting up the necessary infrastructure, recruiting the core staff, and putting into place the important organizational tools like its Rules of Procedure, the Staff and Financial Rules, the establishment of the Provident Fund and its Management Board, and the adoption of a 1993 budget of 8.8 million dollars. A Headquarters Agreement was signed with the Host State—The Netherlands—on 8 December 1993 and entered into force on 23 February 1994.

Meanwhile, work on developing detailed procedures for implementing the provisions of the Convention has also proceeded smoothly. In the area of verification, basic procedures, declaration requirements, and illustrative forms for site-oriented verification activities for CW-related and industrial facilities have been elaborated. Based on inputs from Member States and the appropriate Expert Groups, the Secretariat has developed estimates of the likely inspection effort upon entry into force of the Convention and, as a consequence, of much of the structure of the OPCW's Technical Secretariat needed to carry out the effective implementation of the Convention. Also elaborated are the major elements of technical services needed to support the effective verification of the Convention, including the detailed lists of inspection equipment and its role in inspection support, the structure of the OPCW laboratory and the basic concepts underlying the provision of analytical services to the Technical Secretariat, as well as the resolution of the problem of transporting chemical samples by air.

The Commission has given detailed consideration to the requirements that the OPCW's verification activities will place on the OPCW Building and on the OPCW's information management system. The basic training concepts and structure of the training courses to be carried out in 1994 for the OPCW's inspectors, other Technical Secretariat staff, and for the personnel of National Authorities have been elaborated. The role of offers by Member States for the training process is now clearer. The basic health and safety policy for the Commission and the draft policy of the OPCW have been clarified. Work has commenced on the development of detailed procedures. The Secretariat has begun to outline the drafts of the inspection manual, the confidentiality manual, the handbook for declarations under Article VI (Industrial Declarations) and on draft model facility agreements. Other achievements of the Commission in that area include criteria and methods of destruction of chemical weapons and chemical weapons production facilities. This work will continue in 1994.

The PTS works with governments, representatives of the chemical industry, media, research institutes and non-governmental organizations in a position to assist the PTS in preparing for the early entry into force and effective implementation of the CWC. The means of communication include seminars, speaking engagements, interviews with the media, and written contributions, including the PTS Newsletter, the *OPCW Synthesis*.

Although the chemical industry, by and large, has been supportive of the Convention, and there has been a close liaison between their representatives and the Geneva negotiators as far as the developed countries are concerned, the same cannot be said with certainty about the developing world, where unexpected problems could arise when the Convention's provisions are put into effect. The chemical industry, already one of the most highly regulated, should be able to accommodate the extra reporting and inspection requirements imposed by the CWC. In that connection, a Seminar on National Trial Inspections organised on 2 October 1993 at The Hague drew 90 participants from 44 countries. Member States shared the experience of National and Multilateral Trial Inspections, which would enable them to make appropriate preparations for the forthcoming inspections related to the Convention.

The Expert Group on Chemical Industry Facilities also held a combined meeting with chemical industry representatives on 6 and 7 October which dealt with implementation concerns like loss of confidential business information, minimizing administrative requirements for declarations and ensuring the consistency of inspection methods with efficient plant operations and safety practices. Another such meeting is planned on 27–28 April 1994. In future, the Secretariat will intensify its contacts with the industry and provide updated information on the inspection procedures and requirements as and when they are elaborated by the Preparatory Commission.

The complexity of the text of the Convention, the non-self-executing character of some of its substantive portions, the need to facilitate ratification and implementation, and the need to designate or establish National

Authorities, has led the Secretariat to initiate an International Information Project on the Implementation of the CWC, in cooperation with the Harvard-Sussex Programme on CBW Armament and Arms Limitation, which will eventually result in an integrated Guide to the CWC.

For similar reasons, the Secretariat has also encouraged an initiative from a group of international lawyers, led by Professor Barry Kellman of De Paul University College of Law in Chicago, which will lead to a Guide for Drafting Implementing Legislation. The results of that initiative will be presented, along with others by governmental representatives, research institutes and NGOs, at a Seminar on National Implementation organised by the Secretariat on 18 December 1993. An agreement on exchange of information has also been reached with SIPRI. These efforts have been made because the Secretariat realizes the importance of assisting member States in their preparatory work for the implementation of the Convention.

The Secretariat also gathers information from Member States concerning activities related to implementation to be used for planning and for the compilation of statistics. The Executive Secretary, in separate communications to member States, has asked for preliminary information on the number of facilities likely to come under the heading of verification activities by the Secretariat and on their progress in efforts towards ratification and national implementation.

Another important issue in the proper implementation of the Convention, which has been fully recognized by member States, is that of achieving universality. At the Fourth Session of the Preparatory Commission, held in September 1993, Member States decided to encourage all States that had not yet signed the Convention to do so at an early date. They requested the Executive Secretary to flag that decision in a report to the First Committee of the 48th session of the United

Nations General Assembly and to convey the decision to the appropriate authorities of all such States. The prospects for the broadest possible adherence should be bolstered by the advantages that will accrue to States adhering to the Convention, through the provisions on economic and technological cooperation and assistance built into the Convention. In Article XI of the Convention, States parties undertake to facilitate the "fullest possible" exchange of chemicals, equipment, and scientific and technical information relating to the development and application of chemistry for purposes not prohibited under the Convention. States parties have also undertaken not to maintain among themselves any restrictions incompatible with the obligations under the Convention which would restrict or impede trade and the development of such exchanges, and to review their existing national regulations in the field of trade in chemicals in order to render them consistent with the object and purpose of the Convention. While the Expert Group dealing with these issues has elaborated details on assistance, it will take up the issue of article XI early in 1994.

Much more remains to be done to complete the myriad tasks listed in the text on the establishment of the Preparatory Commission. A draft budget for 1994, recommended by the Expert Group on Programme of Work and Budget, which was approved by the Fifth Session of the Preparatory Commission had laid the foundation of the future activities of the Preparatory Commission in 1994 and beyond, as well as establish the staffing requirements of the PTS. Proceeding on the assumption that the Convention will enter into force in January 1995, two stages of staffing have been recommended for 1994: one covering a modest expansion of core staff; and second, a major phase of hiring inspector trainees and additional personnel beginning six months before the entry into force of the Convention, when 65 States shall have deposited their instruments of ratification with the

Secretary- General of the United Nations. The recommendations envisage a total of 120 staff members for the PTS at the end of Phase I, and 225 staff members, in addition to 140 members of the inspectorate who will be needed to immediately undertake verification activities upon entry into force of the Convention at the end of Phase II. A total of 365 personnel have therefore been recommended for the Organisation for the Prohibition of Chemical Weapons at the time of its establishment. The budget estimates for the Programme of Work recommended by the Group are Dfl 34.42 million for Phase I, increasing to Dfl 56.46 million for Phase II in 1994. So far, the Commission is in relatively sound financial health. A potential surplus of $2.7 million was cited in the Report of the Executive Secretary at the Fifth Plenary Session on 13 December.

In 1994, the Preparatory Commission will continue to build on the infrastructure required for the OPCW by finalizing its building requirements, installing and testing the prototypes and components of the information management system, attending to transitional arrangements between the Preparatory Commission and the OPCW, and preparing the 1995 Programme of Work and the Budget. Along with continued attention to the development of inspection procedures for verification, work will concentrate on developing confidentiality procedures, inspection manuals, procurement of equipment, establishment of OPCW training courses, and selection of inspector candidates, as well as establishment of the laboratory and other verification-related infrastructure.

Methods need to be developed for the selection of industrial facilities for routine inspections out of the thousands of facilities expected to be declared when the Convention enters into force. Standardized criteria and handling methods will have to be set up for the analysis of samples taken in the course of routine and challenge inspections, as well as for cases of the alleged use of chemical weapons. A small number of laboratories throughout the world that meet the OPCW analytical standards may have to be accredited to the Organisation. Many States have expressed the opinion that ways must be found to monitor scientific developments that could pose a threat to the Convention. Other tasks include preparations for the first Conference of States Parties (the highest political organ of the OPCW) and the selection of the first Executive Council (the executive organ of the OPCW), which is composed of 41 States from the five geographic regions.

The Inspectorate of the OPCW, which will be its raison d'être, will need to be staffed with competent personnel with high standards of integrity. A number of States have launched training programmes to supplement the efforts of the PTS in the training of inspectors. In accordance with requirements set by the Preparatory Commission at its Second Plenary Session in April 1993, by the middle of 1994, i.e., six months before the projected entry into force of the Convention, revised draft verification and other procedures for the implementation of the Convention, based on a review by member States, would have to be prepared. The Secretariat would have to be ready to begin recruitment and training of inspector candidates and other key staff needed by the Technical Secretariat immediately after the *entry* into force of the Convention The Commission is currently proceeding on the assumption that the first training course for inspector candidates will commence in mid-August 1994. It must confirm this assumption no later than mid-March (i.e., at its planned Sixth Session) if satisfactory arrangements for training are to be made by Member States which have made offers for training.

The Fourth Plenary Session of the Commission in September was held in the Carel Willink Hall of the Netherlands Congress Centre in The Hague. The Hall has been specially modified for and leased by the Preparatory Commission for five years. Meanwhile, debate continues on finding a suitable site for the permanent OPCW Building in The Hague, since the site originally offered by the OPCW Foundation, on behalf of the Government of The Netherlands, has not met expectations. The present premises occupied by the PTS of the Preparatory Commission in The Hague will also soon prove inadequate for its staff.

The Secretariat will be required to monitor actions by States which have a bearing on the entry into force of the Convention, as well as to convey information on the benefits, rights and obligations under the Convention to a wide audience and maintain contacts with non–signatory States in order to ensure the universality of the Convention. For many, ratification by the two States possessing the largest chemical weapons stockpiles, the Russian Federation and the United States of America, will be the key to establishing the CWC's credibility and to achieving the requisite 65 ratifications for the Convention's entry into force. For chemical weapons possessor States, one of the most daunting problems in implementing the CWC will be to destroy the chemical stocks in an environmentally safe manner, as well as assuming the costs of demilitarization.

An important basic assumption of the Expert Group on Programme of Work and Budget for 1994, which has made detailed recommendations for the staffing of the PTS and the recruitment of inspector trainees in 1994, is that the bilateral agreement of June 1990 between the Russian Federation and the United States of America on Destruction and Non-Production of Chemical Weapons will be in force and in the process of being implemented. That would enable the Commission to recommend that the Organisation "decide, pursuant to Articles IV and V of the Convention, to limit verification by the OPCW to measures complementary to those to be undertaken under this agreement". In that context, the United States–Russian Summit Meeting in mid-January assumes a special significance. A reaffirmation by both countries at the Summit of their continuing support for the Convention and for its early entry into force, and ratification by them early in 1994, would do much to ensure the Convention's entry into force in January 1995. The recent action by the United States Administration in submitting the Convention to the Senate for advice and consent on ratification, and the progress achieved by the Russian Government in securing agreement by local authorities for the construction of two chemical weapons destruction facilities, are welcome steps in that direction. Another recent positive development has been the agreement between the USA and the Russian Federation on the implementation of Phase II of the Wyoming Memorandum of Understanding on Bilateral Verification Experiment and Data Exchange related to Prohibition of Chemical Weapons. Phase II provides for a detailed data exchange in formats which are very similar to those required by the CWC for declarations to be made within 30 days of the entry into force of the Convention, followed by inspections.

Early action by other States in completing their processes and depositing their instruments of ratification requires sustained public support, which arises from a proper awareness of the provisions of the Convention, its benefits and national obligations. It is, therefore, the primary responsibility of all signatory States to make their domestic industry aware of the provisions of the Convention, and to prepare their national bureaucracies for the obligations, which cut across normal departmental responsibilities. There is also the need to build constituencies to support the Convention through the media, NGOs and intergovernmental organizations. Delegations that have not followed the technical aspects of the Preparatory Commission carefully will have difficulty in persuading their governments of the need for extensive national preparations by ministries and industries for CWC implementation in the next few months. The impediment to effective national implementation arises from the fact that many States have neither established national implementation mechanisms nor educated their own bureaucracies about the eventual demands the CWC will place upon them in terms of planning, material and financial resources. Given the relatively limited time before the CWC enters into force and the amount of detailed interministerial work to be done, including drafting legislation and building political support for it, a strong commitment of will and resources will be required from the national agency involved. In many cases, that is not likely to happen in the coming months unless officials involved in the process in The Hague begin to instil a sense of urgency in many central governments at the earliest possible moment, pointing out the large amount of political, legislative and educational work that needs to be done within a very limited time-frame.

Fortunately, the CWC has built-in incentives favouring early ratification. For example, States that do not become full parties through ratification or accession at the time of the first meeting of the Conference of States parties (within 30 days after the Convention enters into force) will not be eligible for seats on the OPCW Executive Council for the first one to two years. Citizens from those countries will also be ineligible for positions in the OPCW's Technical Secretariat until these States ratify. In addition, from the time the Convention enters into force, export controls on many dual-use chemicals relevant to chemical weapons production will be required for member States dealing with governments and industries in States not party to the CWC. Considering that the OPCW will have to hit the ground running, with many of its greatest challenges coming in the first years after the entry into force of the Convention, successful accomplishment of the tasks of the Preparatory Commission can be greatly facilitated by the voluntary cooperation of States parties prior to the entry into force of the Convention. That cooperation could encompass a provision of required declarations in advance to make a proper assessment of verification needs.

When one considers that the objective of the CWC is to eliminate a major weapon of mass destruction and lay the groundwork for new global security relationships, the resources required to implement the Convention are comparatively small. While many important issues are still to be resolved, the work under way in The Hague has nonetheless provided generally auspicious signs that chemical disarmament can soon be transformed into reality. The successful ratification and implementation of the CWC over the next few years could have a significant effect on the way many States think about disarmament in the coming decades. Future calculations as to whether States can rely on cooperative international security regimes at a global or regional level, or will instead continue to rely on unilateral national armament programmes, will depend to a great extent on their experience with the CWC. Moreover, that experience with the CWC is likely to affect future patterns of international regime-building, through its example for future institutional structures designed for the effective management of regimes whenever States come together in a global response to a global threat, challenge or opportunity.

Documentation Relating to Disarmament

Decision of the Conference on Disarmament on a Comprehensive Nuclear Test Ban Treaty

CD/1212
10 August 1993

The Conference on Disarmament,

Taking note of initiatives regarding the negotiation of a comprehensive nuclear test ban treaty (CTB),

Convinced that, to contribute effectively to the prevention of the proliferation of nuclear weapons in all its aspects, to the process of nuclear disarmament and therefore to the enhancement of international peace and security, a CTB should be universal and internationally and effectively verifiable,

Convinced further that, in order to achieve this goal, it is important that a CTB be multilaterally negotiated,

Stressing that, as the sole multilateral disarmament negotiating forum of the international community, it is the appropriate forum for negotiating a CTB,

Decides to give its Ad Hoc Committee on a Nuclear Test Ban a mandate to negotiate a CTB,

Requests the Chairman of its Ad Hoc Committee on a Nuclear Test Ban to make the necessary arrangements to conduct consultations during the period between 3 September 1993 and 17 January 1994 on the specific mandate for, and the organization of, the negotiation.

Mandate of the Conference on Disarmament for an Ad Hoc Committee on a Nuclear Test Ban

CD/ 1238
25 January 1994

In the exercise of its responsibilities as the sole multilateral disarmament negotiating forum of the international community, the Conference on Disarmament decides to re-establish an Ad Hoc Committee under item 1 of its agenda entitled "Nuclear Test Ban", and to give priority to its work.

The Conference directs the Ad Hoc Committee to negotiate intensively a universal and multilaterally and effectively verifiable comprehensive nuclear test ban treaty, which would contribute effectively to the prevention of the proliferation of nuclear weapons in all its aspects, to the process of nuclear disarmament and therefore to the enhancement of international peace and security.

Pursuant to its mandate, the Ad Hoc Committee will take into account all existing proposals and future initiatives, as well as the work of the Ad Hoc Group of Scientific Experts to Consider International Cooperative Measures to Detect and Identify Seismic Events. The Conference requests the Ad Hoc Committee to establish the necessary working groups in order to carry forward effectively this negotiating mandate: these should include at least two working groups, one on verification and one on legal and institutional issues, which should be established in the initial stage of the negotiation, and any other which the Committee may subsequently decide upon.

The Ad Hoc Committee will report to the Conference on Disarmament on the progress of its work before the conclusion of the 1994 session.

States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

As of 15 February 1994

1. Afghanistan
2. Albania
3. Antigua and Barbuda
4. Armenia
5. Australia
6. Austria
7. Azerbaijan
8. Bahamas
9. Bahrain
10. Bangladesh
11. Barbados
12. Belarus
13. Belgium
14. Belize
15. Benin
16. Bhutan
17. Bolivia
18. Botswana
19. Brunei Darussalam
20. Bulgaria
21. Burkina Faso
22. Burundi
23. Cambodia
24. Cameroon
25. Canada
26. Cape Verde
27. Central African Republic
28. Chad
29. China
30. Colombia
31. Congo
32. Costa Rica
33. Côte d'Ivoire
34. Croatia
35. Cyprus
36. Czech Republic
37. Democratic People's Republic of Korea
38. Denmark
39. Dominica
40. Dominican Republic
41. Ecuador
42. Egypt
43. El Salvador
44. Equatorial Guinea
45. Estonia
46. Ethiopia
47. Fiji
48. Finland
49. France

50. Gabon
51. Gambia
52. Germany
53. Ghana
54. Greece
55. Grenada
56. Guatemala
57. Guinea
58. Guinea-Bissau
59. Guyana
60. Haiti
61. Holy See
62. Honduras
63. Hungary
64. Iceland
65. Indonesia
66. Iran, Islamic Republic of
67. Iraq
68. Ireland
69. Italy
70. Jamaica
71. Japan
72. Jordan
73. Kazakhstan
74. Kenya
75. Kiribati
76. Kuwait
77. Lao People's Democratic Republic
78. Latvia
79. Lebanon
80. Lesotho
81. Liberia
82. Libyan Arab Jamahiriya
83. Liechtenstein
84. Lithuania
85. Luxembourg
86. Madagascar
87. Malawi
88. Malaysia
89. Maldives
90. Mali
91. Malta
92. Mauritania
93. Mauritius
94. Mexico
95. Mongolia
96. Morocco
97. Mozambique
98. Myanmar
99. Namibia
100. Nauru
101. Nepal
102. Netherlands
103. New Zealand
104. Nicaragua
105. Niger
106. Nigeria

107. Norway
108. Panama
109. Papua New Guinea
110. Paraguay
111. Peru
112. Philippines
113. Poland
114. Portugal
115. Qatar
116. Republic of Korea
117. Romania
118. Russian Federation
119. Rwanda
120. St. Kitts and Nevis
121. St. Lucia
122. St. Vincent & the Grenadines
123. Samoa
124. San Marino
125. Sao Tome and Principe
126. Saudi Arabia
127. Senegal
128. Seychelles
129. Sierra Leone
130. Singapore
131. Slovakia
132. Slovenia
133. Solomon Islands
134. Somalia
135. South Africa
136. Spain
137. Sri Lanka
138. Sudan
139. Suriname
140. Swaziland
141. Sweden
142. Switzerland
143. Syrian Arab Republic
144. Thailand
145. Togo
146. Tonga
147. Trinidad & Tobago
148. Tunisia
149. Turkey
150. Tuvalu
151. Uganda
152. United Kingdom
153. United Republic of Tanzania
154. United States
155. Uruguay
156. Uzbekistan
157. Venezuela
158. Vietnam
159. Yemen
160. Yugoslavia
161. Zaire
162. Zambia
163. Zimbabwe

Summary of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction

Introduction On 3 September 1992 the Conference on Disarmament at Geneva adopted the text of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (CWC) after painstaking negotiations lasting a decade. The Convention was opened for signature on 13 January 1993 at a signing ceremony in Paris. It is the first disarmament agreement negotiated within a multilateral framework that provides for the elimination of an entire category of weapons of mass destruction under universally applied international control.

The CWC consists of the Preamble, 24 articles and 3 annexes—Annex on Chemicals, Annex on Implementation and Verification, and Annex on the Protection of Confidential Information—that form an integral part of the Convention. The Convention will have unlimited duration and will enter into force 180 days after the date of deposit of the 65th instrument of ratification—but in no case earlier than two years after its opening for signature. The Secretary-General of the United Nations is the Depositary of the Convention which will be implemented by the Organisation for the Prohibition of Chemical Weapons (OPCW) located in The Hague.

Main Provisions

The Preamble states the determination of States Parties to prohibit and eliminate all types of weapons of mass destruction. It recalls the Geneva Protocol of 1925 (prohibiting use of chemical and biological weapons in war), and the Biological Weapons

This summary of the text of the CWC was prepared by the Provisional Technical Secretariat of the Preparatory Commission for the Organisation for the Prohibition of Chemical Weapons in its Information Series I of December 1993.

Convention of 1972 (outlawing biological and toxin weapons and requiring their destruction), both of which are multilateral instruments pertinent to the Convention. It also recognizes the prohibition, embodied in agreements and relevant principles of international law, of the use of herbicides as a method of warfare and expresses the desire of States Parties to enhance their economic and technological development.

Under Article I (General Obligations) the Convention prohibits the development, production, acquisition, retention, stockpiling, transfer and use of chemical weapons. It requires each State Party to destroy chemical weapons and chemical weapons production facilities under its jurisdiction and control, as well as any weapons it has abandoned on another State's territory. States Parties are never to engage in any military preparations to use chemical weapons; nor to assist or encourage others to engage in any of the proscribed activities; and not to use riot control agents as a method of warfare.

Article II (Definitions and Criteria) defines chemical weapons as all toxic chemicals and their precursors intended for purposes other than those not prohibited by the Convention, which include peaceful uses, chemical protection, military purposes not involving toxic chemicals as a method of warfare, and law enforcement. Chemical weapons also include the munitions and devices specially designed to release those toxic chemicals, and any "specially designed equipment".

Under Article III (Declaration) each State Party shall, not later than 30 days after the Convention enters into force for it, submit to the OPCW detailed declarations with respect to chemical weapons, and chemical weapons production facilities, specifying their precise location and quantity, and providing a general plan for their destruction. States Parties are also required to declare chemicals held for riot control purposes.

Article IV (Chemical Weapons) and Article V (Chemical weapons Production Facilities) along with the Annex on Implementation and Verification contain detailed provisions regarding the destruction of chemical weapons and chemical weapons production facilities including the verification of such destruction. Destruction of chemical weapons and chemical weapons production facilities will have to be completed within ten years. In exceptional cases, the deadline for destruction of chemical weapons may be extended by up to an additional five years and chemical weapons production facilities may be converted for peaceful uses, in a manner which will ensure that they are not reconverted for prohibited purposes. Each State Party should also pay for the international verification of destruction of its chemical weapons and chemical weapons production facilities, unless decided otherwise by the Executive Council which will be the Executive organ of the OPCW.

Article VI (Activities not Prohibited under the Convention) along with the Annex on Implementation and Verification, details a comprehensive regime for monitoring the chemical industry by the OPCW through declarations and on-site inspections on a routine basis. Declarations are required with respect to chemicals specified in three lists or "schedules", and facilities engaged in activities related to these chemicals or other unscheduled discrete organic chemicals specified in the Convention. Differing forms of inspections are envisaged for the three schedules of chemicals, depending on the risk they pose to the object and purpose of the Convention. Verification of other facilities which produce unscheduled discrete organic chemicals will start in the fourth year after entry into force of the Convention, unless the Conference of States Parties decides otherwise at its third regular Session. Declaration and inspection procedures are applied to chemical industry facilities if amounts of chemicals handled by those facilities exceed respective thresholds, specified in the Convention

Article VII (National Implementation Measures) relates to the measures and legislation which will have to be undertaken by States Parties to ensure national implementation of the Convention and the establishment or designation of National Authorities to serve as a focal point for liaison with the OPCW.

Article VIII (The Organisation) establishes the 0PCW with the headquarters in The Hague. The Conference of States Parties, will be its highest decision making body, meeting on an annual basis and in special sessions when necessary. The Executive

Council, composed of 41 States Parties representing five regional groups on a rotational basis, will supervise the activities of the OPCW and will be responsible to the Conference of States Parties, and the Technical Secretariat, headed by its Director General, will conduct the practical work of the Organisation. The principal component of the Technical Secretariat will be its Inspectorate, which will carry out the verification activities under the Convention.

Article IX (Consultations, Cooperation and Fact Finding) along with the Annex on Implementation and Verification, provides for short-notice challenge inspections by the OPCW of any facility or location in the territory, or in any other place under the jurisdiction or control of any State Party, for clarifying and resolving any questions concerning possible non-compliance. The inspected State Party can use "managed access" techniques to protect sensitive installations and information unrelated to the Convention

Under Article X (Assistance and Protection Against Chemical Weapons) States Parties facing threats or attacks involving chemical weapons are entitled to receive assistance, including defensive equipment such as sensors, protective clothing, decontamination equipment and antidotes, and advice on chemical defensive measures. States Parties are obliged to provide assistance by choosing one or more of the following measures: contribution to the voluntary fund to be established by the Conference of States Parties; conclusion of agreements with the OPCW for procurement of assistance in case of use, or threat of use, of chemical weapons; and declaration of the kind of assistance to be provided in emergencies.

Article XI (Economic and Technological Development) aims at the fullest possible exchange of chemicals, equipment and scientific and technological information relating to the development and application of chemistry for purposes not prohibited by the Convention among States Parties who have also undertaken to review their existing national regulations in the fields of trade in chemicals in order to render them consistent with the object and purpose of the Convention.

Article XII (Measures to Redress a Situation and to Ensure Compliance Including Sanctions) provides for a number of penalties, including sanctions, for a State Party which fails to take remedial action regarding compliance with the Convention. Cases of particular gravity could be referred to the Security Council for any further, possibly mandatory, action under the Charter of the United Nations.

The remaining 12 Articles of the Convention deal with: its relation to other international agreements, settlement of disputes, amendments, duration and withdrawal, status of the annexes, entry into force, reservations, Depositary and authentic texts. The Articles of the Convention are not subject to reservations.

The Annex on Chemicals contains three schedules of chemicals which are subject to differing levels of verification activities and the guidelines for these schedules.

The Annex on Implementation and Verification contains 11 Parts regarding specific verification and other procedures envisaged for the destruction of chemical weapons and of chemical weapons production facilities, routine inspections in the industry, challenge inspections and specific measures for investigation in cases of alleged use of chemical weapons. It also contains specific provisions regulating trade in scheduled chemicals with States who are not Parties to the Convention.

The Annex on Protection of Confidential Information stipulates the general principles for the handling of confidential information, the employment and conduct of personnel in the Technical Secretariat of the OPCW, measures to ensure the confidentiality of sensitive information and installations in the course of inspections and procedures in cases of breaches of confidentiality.

Present Status of the Convention As of 31 December 1993, 154 States had signed the Convention, and 4 States had already deposited their instruments of ratification with the Secretary General of the United Nations. A resolution establishing the Preparatory Commission for the Organisation for the Prohibition of Chemical Weapons was adopted by Signatory States in Paris on 13 January 1993. On 8 February 1993, the Secretary General of the

United Nations convened the First Plenary Session of the Preparatory Commission in The Hague, which adopted a decision to establish a Provisional Technical Secretariat (PTS). In the past few months, the Preparatory Commission has been engaged in the task of developing detailed procedures for the implementation of the Convention and instituting the necessary infrastructure for the Organisation for the Prohibition of Chemical Weapons. The Preparatory Commission holds formal Plenary Sessions, each about one week long, several times a year at intervals of approximately three months. By the end of 1993 a total of five Plenary sessions had been held. Specific issues are considered in Working Groups and Expert Groups, whose recommendations are then reviewed in the Plenary Sessions. The Provisional Technical Secretariat assists the Plenary and other meetings of the Preparatory Commission, and works with governments, representatives of the chemical industry, research institutes and NGOs to help Member States who are presently engaged in preparations to meet the requirements of compliance with the Convention. The Commission, for planning purposes, is proceeding on the assumption that the Convention will enter into force in January 1995. At the Fourth Session of the Preparatory Commission held in September 1993, Member States decided to encourage all States that have not yet signed the Chemical Weapons Convention to do so at an early date, in order to ensure the universality of this unprecedented Convention.

Recent Books

The following summaries cover books received by the Centre for Disarmament Affairs which are of particular interest in the field of arms reduction and disarmament. Books received by the Centre relating to broader topics of international peace and security are listed at the end.

Arms Control: What Next? Lewis A. Dunn and Sharon Squassoni, eds. Boulder, Colorado, Westview Press, 1993. 169 p.
Growing out of a report for the Treaty Verification Program of the Lawrence Livermore National Laboratory, this book contains a series of articles by the editors and six other writers which examine major arms control issues for the decade ahead, discussing how arms control can contribute to security in the new political situation.

Arms Control Without Negotiation: From the Cold War to the New World Order. Bennett Ramberg, ed. Boulder, Colorado, Lynne Rienner Publishers, 1993. 281 p.
A study of unilateral arms control addressing issues beyond negotiated accords, concerning: unilateral measures to induce reciprocal action; defense practice as unilateral arms control; and the domestic politics of unilateral arms control.

Beyond the Cold War: New Dimensions in International Relations. Geir Lundestad and Odd Arne Westad, eds. New York, Oxford University Press, 1993. 257 p.
For the celebration of the 90th anniversary of the Nobel prizes in 1991, the Norwegian Nobel Committee brought together historians and political scientists to outline future dimensions in international relations. The 18 manuscripts from the symposium, later revised in the light of new events, address issues concerning non–proliferation and regional conflicts in the current era.

Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943–1945. Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall. New York, Cambridge University Press, 1993. 509 p.

The four main authors and other contributors give a detailed account of the technical research that led to the first atomic bomb. They explore how the scientists, engineers, and military personnel at Los Alamos worked together to create a new approach to large-scale research.

Defense Spending & Economic Growth. Payne, James E. and Anandi P. Sahu, eds. Boulder, Colorado, Westview Press, 1993. 283 p.

The contributors to this volume evaluate the effects of defense spending on economic growth and investigate how the changed world political climate is likely to alter the pattern of defense spending both for developed and developing countries.

International Security in the Modern World. Roger Carey and Trevor C. Salmon, eds. New York, St. Martin's Press, 1992. 241 p.

The editors and eight other writers focus on basic issues that underlie current debate on international security, including deterrence, alliances, and high technology with dual-use potential.

The Macroeconomic Dimensions of Arms Reduction. F. Gerard Adams, ed. Boulder, Colorado, Westview Press for Pew Studies in Economics and Security, 1992. 259 p.

After an introduction on arms reductions and macroeconomics, the book discusses the impact of military cuts and conversion on: the industrial countries, the developing countries, and on Eastern Europe.

Moyen–Orient: Les dossiers de la paix. Pascal Fenaux. Brussells, Belgium, GRIP – European Institute for Research and Information on Peace and Security, 1992. 127 p.

Focusing on the Middle East peace conference begun in Madrid in 1991, the author presents a broad analysis of the economic, ideological, military, territorial and border questions at stake in the region. A chapter is devoted to arms control issues in the Middle East and examines previous efforts as well as the status of on-going multilateral negotiations.

Non–Conventional–Weapons Proliferation in the Middle East: Tackling the Spread of Nuclear, Chemical, and Biological Capabilities. Efraim Karsh, Martin S. Navias and Philip Sabin, eds. New York, Oxford University Press, 1993. 300 p.

Based on expert papers originating from a conference held by the Department of War Studies at King's College, London, in November 1991, twelve papers, now revised, review the question of non-conventional weapons proliferation in the Middle East. After setting out the historical perspective, the current state of proliferation in the region is examined, its strategic and political implications, as well as prospects for arms control.

The Nonproliferation Review. Monterey, California, Program of Nonproliferation Studies, Monterey Institute of International Studies, 1993. 169 p.

This is the first issue of *The Nonproliferation Review*, which merges two previous publications of the Monterey Institute's Program for Nonproliferation Studies, *Eye on Supply* and the *Missile Monitor*. The Institute plans to develop the *Review* as a clearing–house for information and analysis of different sub-fields in the study of non–proliferation.

Nuclear Proliferation and the Future of Conflict. Martin Van Creveld. New York, The Free Press, 1993 arms reduction 180 p.

The author examines the nuclear policies of several developing countries as a starting point for an analysis of the transformation he feels is underway in the nature of modern warfare.

Security, Sovereignty and Nuclear Weapons in South Asia. Chris Smith. London, Council for Arms Control, King's

College, 1993. 41 p. (Faraday Discussion Paper No.20)
The author, a senior Fellow at the Centre for Defence Studies at King's College, London, examines nuclear proliferation in South Asia from the perspective of the countries in and outside the region. He also addresses the issues that emerge in efforts to reverse the nuclear arms race in the region.

Shadows & Substance: The Chemical Weapons Convention. Benoit Morel and Kyle Olson, eds. Boulder, Colorado, Westview Press, 1993. 345 p. (Ridgway Series in International Security Studies)
This first volume in the Ridgway Series in International Security Studies, published by the Center of the same name (University of Pittsburg), gathers fifteen articles on a broad range of aspects of the Chemical Weapons Convention. The work is intended as a contribution to discussions during the process of ratification of the Convention, in capitals and by the Preparatory Commission for the Organization for the Prohibition of Chemical Weapons.

Soviet Forces in Transition. N.E. Taylor and D.J. Marshall-Hasdell, eds. United Kingdom, Soviet Studies Research Centre, 1992. 147 p. (Proceedings of a conference held at the Royal Air Force Staff College, Bracknell)
A conference sponsored by the Director of Defence Studies (RAF) and the Soviet Studies Research Centre in 1992 examined the military sector in the former Soviet Union and assessed the impact of the political changes on that institution.

U.S. Foreign Policy in Transition. James E. Winkates, J. Richard Walsh and Joseph M. Scolnick, Jr., eds. Chicago, Illinois, Nelson–Hall Publishers, 1993. 284 p.
The three editors and nine other writers explore some key issues in the shifts of United States foreign policy in the post–cold war period. Among the issues discussed are the transitions taking place in United States defense policy in the 1990s and old and new issues concerning its policy on arms control.

The World Court Project on Nuclear Weapons and International Law. **Northampton,** Massachusetts, Aletheia Press, 1993 (second edition). 42 p.
In support of the joint project of the International Association of Lawyers Against Nuclear Arms (IALANA), the International Peace Bureau (IPB) and the International Physicians for the Prevention of Nuclear War (IPPNW), this publication outlines the legal case against nuclear weapons and describes the legal proceedings of the petition for an advisory opinion of the International Court of Justice (ICJ) on the legality of nuclear weapons.

The Evolution of UN Peacekeeping: Case Studies and Comparative Analysis. William J. Durch, ed. New York, St. Martin's Press in association with the Henry L. Stimson Center, 1993. 509 p.

Humanitarianism Across Borders: Sustaining Civilians in Times of War. Thomas G. Weiss and Larry Minear, eds. Boulder, Colorado, Lynne Rienner Publishers, 1993. 210 p.

Keeping the Peace in the Post–Cold War Era: Strengthening Multilateral Peacekeeping John Roper, Masashi Nishihara, Olara A. Otunnu and Enid C.B. Schoettle. New York,The Trilateral Commission, 1993. 101 p. (The Triangle Papers: 43)

Nationalism and Ethnic Conflict: Threats to European Security. Stephen Iwan Griffiths. New York, Oxford University Press for the Stockholm International Peace Research Institute (SIPRI), 1993. 136 p. (SIPRI Research Report No.5)

Pandaemonium: Ethnicity in International Politics. Daniel Patrick Moynihan. **New York,** Oxford University Press, 1993. 221 p.

Power and Peace: The Diplomacy of John Foster Dulles. Frederick W. Marks III. Westport, Connecticut, Praeger, 1993. 266 p.

Seeking Peace from Chaos: Humanitarian Intervention in Somalia. Samuel M. Makinda. Boulder, Colorado, Lynne Rienner Publishers for International Peace Academy, 1993. 92 p. (Occasional Paper Series)

Self–Determination in the New World Order. Morton H. Halperin, David J. Scheffer and Patricia L. Small. Washington, D.C., Carnegie Endowment Book, 1992. 178 p.

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Sales Publications

Books*

The United Nations Disarmament Yearbook
Vol. 18: 1993 (Forthcoming)

Status of Multilateral Arms Regulation and Disarmament Agreements, 4th edition: 1992, Vols. 1 and 2
(Sales No. E.93.IX.11)

Studies**

Study on the application of confidence-building measures in outer space. This report of the group of governmental experts appointed by the Secretary-General (see resolution 45/55 B and A/48/305) examines the application of different confidence-building measures in outer space, including different technologies available, and possibilities for defining appropriate mechanisms of international cooperation in specific areas of interest. (Forthcoming)

Topical Papers

Number 14: *Confidence- and Security-building Measures in Southern Africa.* Proceedings of a seminar held at Windhoek, Namibia from 24–26 February 1993.
(Sales No. E.93.IX.10)

Number 15: *Transparency in Armaments: The Mediterranean Region.* Proceedings of a symposium held in Florence, Italy from 29 March–1 April 1993
(Sales No. E.93.IX.13)

* Forthcoming in Arabic, Chinese, French, Russian and Spanish.

** Also available in Arabic, Chinese, French, Russian and Spanish.

Number 16: *Disarmament and National Security in an Interdependent World.* Proceedings of a conference held in Kyoto, Japan from 13–16 April 1993
(Sales No. E.94.IX.3)

Number 17: *Regional Approaches to Confidence- and Security-building Measures.* Proceedings of a symposium held in Graz, Austria from 2–4 June 1993
(Sales No. E.94.IX.5)

Non–sales publications

Disarmament Newsletter

November 1993—Volume 11, Number 2

Others

Chemical Weapons Convention: Questions and Answers.
Published by the Centre for Disarmament Affairs and the Department of Public Information
DPI/1426–October 1993–12M)

The Scourge of Land Mines.
Published by the Department of Public Information
DPI/1415–October 1993–13M

New Realities: Disarmament, Peace-building and Global Securit. Excerpts from the panel discussions organized by the NGO Committee on Disarmament, Inc., at a conference held at the United Nations in New York 20–23 April 1993, ISBN92-1-142199-3.

United Nations Institute for Disarmament Research (UNIDIR)

Research Reports

Conference of Latin American and Caribbean Research Institutes. Proceedings of the São Paulo Conference,
2–3 December 1991, by Péricles Gasparini Alves (ed.), 1993
(Sales No. GV.E.93.0.8)

Nuclear Deterrence: Problems and Perspectives in the 1990's,
by Serge Sur (ed.), 1993, 173p.
(Sales No. GV.E.93.0.16)

Vérification du désarmement ou de la limitation des armements: instruments, négotiations, propositions,
par Serge Sur (éd.), 1994 (forthcoming)

Research Papers

No. 21—*Les minorités nationales et le défi de la securité en Europe,* par Dominique Rosenberg, 1993, 45p.
(Numéro de vente: GV.F.93.0.21)

No. 22—*Crisis in the Balkans*
by Ali L. Karaosmanoglu, 1993, 22p
(Sales No. GV.E.93.0.22))

No. 23—*La transition vers l'économie de marché des pays "ex de l'Est",* par Louis Pilandon, 1993, 90p.
(Numéro de vente: GV.F.94.0.3)

No. 24—*Le désarmement et la conversion de l'industrie militaire en Russie,* par Sonia Ben Ouagrham, 1993, 110p.
(Numéro de vente: GV.F.94.04)

No. 25—*Development of Russian National Security Policies: Military Reform,* by Andrei Raevsky, 1994, 48p
(Sales No. GV.E.94.0.5)

Information Booklet

UNIDIR and its activities 1994/95 / L'UNIDIR et ses activités 1994/95

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No.22–23 June–September/juin–septembre 1993, *START and Nuclear Disarmament: Problems of Implementation/ START et le désarmement nucléaire: problèmes d'exécution, 101p.*

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DISARMAMENT

Volume XVI, Number 2—1993

Strengthening the NPT and the Nuclear Non-Proliferation Regime

The Non-Proliferation Outlook
Hans Blix

The Nuclear Non-Proliferation Regime:
Options and Opportunities
John Simpson

The Role of the Nuclear Powers
Ivo H. Daalder

Nuclear Non-Proliferation: The Current Context
Jayantha Dhanapala

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Mitsuro Donowaki

Towards a Genuine Nuclear
Non-Proliferation Regime
Miguel Marín-Bosch

Strengthening the NPT Regime: a CTBT
and a Cut-off of Fissionable Material
Roland Timerbaev

The Non-Proliferation Treaty,
Tlatelolco and the Regional Contribution
Julio C. Carasales

Nuclear Non-Proliferation and
Confidence-building in the Southern Cone
Marcos Castrioto de Azambuja

Peace and Denuclearization:
an Israeli Perspective
Avi Beker

Africa and the International Nuclear
Non-Proliferation Regime
Gift Punungwe

Denuclearization in Africa:
The South African Dimension
Jeremy Shearar

Documentation Relating to Disarmament

Treaty on the Non-Proliferation
of Nuclear Weapons
Entered into force: 5 March 1970

**Related Documentation on a
Comprehensive Test Ban**

Excerpts from a Radio Address by the
President of the United States
Washington, DC, 2 July 1993

Excerpts from a letter of United States Secretary of State
Warren Christopher to Foreign Minister Ali Alatas of the
Republic of Indonesia
New York, 9 August 1993

Concluding Statement of the President of the Amendment
Conference of the States Parties to the Treaty Banning
Nuclear Weapon Tests in the Atmosphere, in Outer Space
and under Water
New York, 10 August 1993

DISARMAMENT

Volume XVI, Number 1—1993

Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction

The Chemical Weapons Convention:
A Great Achievement in Multilateral Disarmament
Carl-Magnus Hyltenius

The Scope and Balance of the
Chemical Weapons Convention
Adolf Ritter von Wagner

The Outstanding Characteristics of the
Convention on the Prohibition of Chemical Weapons
Gérard Errera

Some Observations on the Chemical
Weapons Convention
Serguei B. Batsanov

Concluding Negotiations for the Chemical
Weapons Convention: A Flexible Global Agreement
Whose Time Has Come
Stephen J. Ledogar

The Australian Contribution to the Conclusion of the
Negotiations for a Chemical Weapons Convention
Paul O'Sullivan and Bronte Moules

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Disarmament from a Middle-East Perspective
Mounir Zahran

The Cost of the Chemical Weapons Convention
for the Developing Countries
Hassan Mashhadi

The Chemical Weapons Convention:
A Third-World Perspective
Prakash Shah

A Latin American View of the Convention
on the Prohibition of Chemical Weapons
Roberto García Moritán

The Chemical Weapons Convention,
and the Security and Development Needs of Brazil
Celso L. N. Amorim

The Chemical Weapons Convention:
An Assesment of Future Implications
Emeka A. Azikiwe

Documentation Relating to Disarmament

General Assembly resolution 47/39
on the Chemical Weapons Convention
New York, 30 November 1992

Preamble to the Chemical Weapons Conventi

DISARMAMENT

Volume XV, Number 4—1992

Post '92 Helsinki

Towards an Operational Institution for Comprehensive Security
Victor-Yves Ghebali

Europe on the Way to a Regional System of Collective Security
Dieter S. Lutz

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Pertti Torstila

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Alex Morrison

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Finn Sollie

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Lev Voronkov

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Miljan Komatina

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Andrzej Karkoszka

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Jasjit Singh

Military Aspects of Defensive Security
Robert Neild

Defensive Security in Regions Other Than Europe
Nazir Kamal

Documentation Relating to Disarmament

Protocol to the July 1991 START Treaty
Lisbon, 23 May 1992

Permanent Five
Interim Guidelines Related to Weapons of
Mass Destruction
29 May 1992

Final Document of the Extraordinary Conference of the
States Parties to the CFE Treaty
Oslo, 5 June 1992

Joint United States–Russian Statements
Washington, 17 June 1992

Joint Understanding on the Elimination of MIRVed ICBMs
and Further Reductions in Strategic Offensive Arms

Joint Statement on a Global Protection System

Missile Technology Control Regime Plenary Meeting
Oslo, 29 June–2 July 1992

Helsinki Document 1992 (excerpts)
Helsinki, 9–10 July 1992

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Prague, 31 January 1992

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Brazil upon the twenty-fifth anniversary of the signing of
the Treaty of Tlatelolco
14 February 1992

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United Nations on Cambodia
19 February 1992

CSCE Declaration on the Treaty on Open Skies
Helsinki, 24 March 1992

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Acronyms

ABACC	Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials
AFCONE	African Commission on Nuclear Energy
AFRA	African Regional Cooperative Agreement
ANC	African National Congress
ARCAL	Latin American Regional Arrangement
BW	biological weapons
COCOM	Coordinating Committee for Multilateral Export Controls
CSCE	Conference on Security and Cooperation in Europe
CTBT	comprehensive test-ban treaty
CW	chemical weapons
DPRK	Democratic People's Republic of Korea
EURATOM	European Atomic Energy Community
G-7	Group of Seven
HEU	highly enriched uranium
ICBM	intercontinental ballistic missile
INF	bilateral (United States–Russian) Treaty on the Elimination of Their Intermediate-Range and Shorter-Range Missiles
MERCOSUL	Common Market of the South (Brazilian form)
MERCOSUR	Common Market of the South (Acronym in Spanish)
MTCR	Missile Technology Control Regime

NATO	North Atlantic Treaty Organization
NGO	non-governmental organization
NIEO	New International Economic Order
NPT	nuclear non-proliferation Treaty
NWFZ	nuclear-weapon-free zone
OAU	Organization of African Unity
OPANAL	Organization for the Prohibition of Nuclear Weapons in Latin America and the Caribbean
PAC	Pan-Africanist Congress
PTBT	partial test-ban Treaty
SCCC	Common System of Accounting and Control of Nuclear Materials
SSOD-I	first special session of the General Assembly devoted to disarmament
START	strategic arms reduction Treaty
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WHO	World Health Organization

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